POPULAR Computing WEEKLY

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Vegas CES show report

New Coleco micro awaits licence deal

HAVING dropped its Adam computer in the US after months of speculation, Coleco is reported now to have developed a new computer.

The new machine was shown to a few prominent retailers at the Winter Consumer Electronics Show in Las Vegas last week and Coleco is hoping to license the computer to an unnamed American consumer electronics manufacturer.

The machine features a built-in telephone modem and communications software and is software compatible with the Apple IIe and IIc.

Coleco is also retaining the rights to the name Adam, but

Continued on page 4 ▶

Sinclair offers upgrade

SINCLAIR has confirmed that it is to provide an up-grade kit to convert rubber-keyed Spectrums into Spectrum Plusses (see *Popular Computing Weekly*, December 20).

The upgrade will be offered in two forms. Either the consumer can buy an upgrade kit from Sinclair costing £20 or pay £50, for the upgrade to be carried out by Sinclair itself.

The upgrade takes the form of an add-on Spectrum + type keyboard which is fitted in very much a similar way as many of the other Spectrum

Continued on page 4 ▶

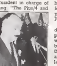


Commodore's C128 – in the UK this summer

Doubts over C16 & Plus/4

THE FUTURE of the Commodore C16 and Plus/4 machines is in doubt following disappointing sales and software support, particularly in the US, and the launch of Commodore's C128 machine which is scheduled for launch in the UK in the Summer.

According to Frank Leonardi, Commodore's US vice president in charge of marketing: "The Plus/4 and C16 are not selling well in the States, largely because of a lack of advertising. They will have to be repositioned in the marketplace."



Frank Leonardi

In terms of software support there has been no software released in the US for either machine from any independent software houses. In this country, while there has been a trickle of support for the C16, none has yet appeared specifically for the Plus/4.

With the launch of Commodore's new C128, and LCD portable machines both of which are partially compatible with the Commodore 64 – the non C64 – compatible C16 and Plus/4 appear now rather left out by Commodore.

Whether any cut in the price of the machines in

Continued on page 4 ▶

INSIDE) ATARI'S NEW ST MICRO – FULL DETAILS)

Vol 4 No 3

POPULAR Computing WEEKLY

View

It's obvious that Jack Tramiel knows exactly where he's going.

Atari's ST machine, launched last week at Las Vegas CES show, is very well thought out. A desirable micro at an affordable price.

On paper, at least, it looks most impressive.

I have no wish to be unkind to Sinclair, but it's the machine the QL promised but never delivered.

The ST (sixteen/thirty-two, not Sam Tramiel, apparently) uses the 68000 chip. This immediately makes the machine a more attractive proposition than the QL. The power of the 32-bit internal architecture isn't fettered, as it is on the QL, by having a 8-bit bus to the outside world. Both machines have 128K Ram. Although the Atari machine doesn't have a built-in disc drive it is configured for the Sony 3½inch format drive. The 3½inch format is a popular choice and not nearly as limiting as the QL's built-in microdrives. The ST's huge 198K Rom, which holds Digital Research's mouse controlled *Gem* operating software, is a more satisfactory (and ambitious) approach than Sinclair's Psion applications packages which must be loaded from microdrive.

But where the ST is at its most impressive is in the little touches: its I/O facilities, its built-in hard disc controller and Midi music interface.

Sinclair, Commodore and Acorn ought to be getting nervous. Sinclair has thrown away much of its 12-month advantage with the QL through its dogged passion for microdrives.

Commodore's C128 is a stop-gap while its Amiga rival for the ST is still being refined.

And Acorn is mystifying. Surely it cannot think that the BBC will compete with the ST at the same price?

Presents...

Futures...

Readers' Pole results – your selections for fame or failure .. CES report, Part 2 software

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ABC

56 052 copies sold every week (Jan-June 1984 ABC)

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Computer Trade Association Magazine of the Year

Atari's European launch

ATARI'S new ST and XE range of 32/16 and 8-bit machines, launched to the US at the Winter Consumer Electronics Show, last week will get their first European showing at the Hanover Fair in April

"We plan to have all the new machines on sale throughout Europe in May, and we will be bringing out the whole range at once," said Atari UK's marketing manager Rob Harding

Two Atari software packages also planned to be available at launch for the 8-bit XE range are *Infinity* and *Atari Writer +*

"*Infinity* is a *Lotus 1-2-3* type integrated package, but it will be far cheaper *Atari Writer +* will be as *Atari Writer*, but with a built in proof reader," Rob continued.

"We are definitely moving away from games software to more serious applications – games is almost a dirty word at Atari now "

Also the 32-bit workstation, announced by Jack Tramiel last December (see *Popular Computing Weekly*, December 13), which was not shown at CES, will be on show at Hanover and is due for a May launch here.

C16 and Plus/4

◀ continued from page 1

America would be reflected in this country is unclear

Sales of the two new machines over Christmas appear to have been moderate, with the Plus/4, which reached the shops a few weeks later than the C16, moving markedly slower

"They are selling as well as we expected, and the C16 is doing quite well," said Dave Gilbert of Dixon s Sales of the Plus/4 are more limited – it's not selling as well as the QL "

John Flatman of Boots said "Sales have been disappointing in comparison to our own expectations We were hoping that the C16 would be a low-end competitor to the Spectrum and it just didn't happen. Even so it is selling faster than the Plus/4, but then it's at a lower price "

Chris West, Commodore UK's software development manager denied that Plus/4 sales had been sluggish. "The Plus/4 is actually doing better than we thought it would. We are on target for 100,000 sales by March

"Commodore's next big push in the home market will be the launch of the C128 over here in June or July.

● Commodore has gained the license from Infocom to produce a Plus/4 version of *Hitchhiker's Guide to the Galaxy* The game should be released on disc only, in March/April

Acorn's ABCs on the way

FIRST UNITS of Acorn's ABC micro range are now coming off the production lines, and deliveries of the machine are now scheduled to begin at the end of this month

"The bottom of the range machines will be available first, with the top machines not coming out until Easter time " said an Acorn spokesman

Acorn have still not released official prices for the series, but the low-end Personal Assistant model is expected to be priced around £700 with the top-of-the-range 310 costing around £4000

Avalon sequel set for March

THE SEQUEL to Hewson's successful graphic adventure *Avalon* should be available at the end of March

Called *Dragontorc of Avalon*, it uses the same characters as the original while introducing others More use is made of keyboard commands It will be available for the Spectrum, almost certainly at the same price as *Avalon*, £7 95.

DK'Tronics buys Currah

DK TRONICS, the Spectrum peripheral manufacturer, has come to the rescue of Currah, which went into receivership three weeks ago

"We have bought the rights to the Currah trading name, and the exclusive copyright to the Currah range", said Roger Barnard, marketing manager of Dk'tronics

Currah's range consists of Currah Slot, a Spectrum adaptor, and Currah's speech synthesiser for the Spectrum and Commodore 64

Dk'tronics plans to continue producing and marketing its own Spectrum and Amstrad speech synthesiser in parallel with the Currah models It will also re-open its US company to market Currah's Commodore 64 version

Spectrum opgrade

◀ continued from page 1

keyboard up-grade kits already available Some soldering is needed, but, says Sinclair, "you don't need an understanding of electronics "

With the £50 upgrade service, you need to send your Spectrum back to Sinclair which says it will despatch the upgraded computer back within ten days of receipt.

The service is operating from Sinclair's Camberley Branch. Details from Sinclair Research, Upgrade Department, Stanhope Road, Camberley, Surrey, GU15 3PS

Paddle your own canoe

NEW GENERATION have launched Shoot the Rapids *a slalom canoeing simulation.*

The player must use the keyboard or joystick to paddle the canoe through a slalom course. Water currents, adverse or favourable, are displayed on screen and must be taken into account In later screens you will have to negotiate beavers as well as the slalom poles.

Shoot the Rapids *is available for the* Commodore 64, *for £7 95*

Coleco

◀ continued from page 1

will not have any part in the marketing of its Adam machine It has sold off remaining stocks of the Adam to an as yet undisclosed retail outlet in the US

"We are still producing both hardware and software for the Adam, but due to current conditions in the marketplace and the rapidly changing demands of the consumer, the Adam could not remain a competitive concern," said a spokeswoman for Coleco in Connecticut, USA. "We will, however, continue to produce and sell the Colecovision video games system in America

The Adam computer was launched in the US eighteen months ago, and suffered from initial manufacturing difficulties which led to inadequate supplies and poor sales Last Autumn, Coleco substantially cut the price of the machine, giving rise to rumour that it was planning to abandon the model

Coleco pulled out of the UK market two months ago (see *Popular Computing Weekly*, November 29) Both in the UK and US markets it plans to concentrate on its range of toys, which includes the infamous Cabbage Patch Doll



Sinclair's C5 launched

SINCLAIR'S electric vehicle the C5 was launched last week with much publicity and reassurances from Sinclair that the vehicle would be safe on the roads

The vehicle – Sinclair is deliberately not calling it a 'car' – is a three wheeled single-seater, selling by mail order for £399, the same price as the QL

It is powered by a 'deep-discharge' 12V battery, and also has pedals, useful for hills, and if the battery runs out The battery gives a distance of 20 miles on a single 8 hour charge

The chassis, developed by Lotus cars, is made of light steel, and the body is built of injection-moulded polypropylene A single headlight is built-in both at the front and at the rear

The steering bar, similar to the handle bars on a bicycle, is placed so that it is below the driver just in front of the seat. The battery on-off switch is on the handle bar, and must be kept pressed, or the battery cuts out

The C5 is only the first in a range currently being developed by Sinclair Vehicles "We plan a family of pollution-free, economic, quiet electric vehicles. The C5 is the baby of that family", said Sir Clive Sinclair

● The C5 is not the only new product from the Sinclair stable in 1985 At the Consumer Electronics Show in Las Vegas, Sinclair Research launched a wristwatch radio It will be aimed primarily at the US market and at the moment there are no plans to introduce it in the UK

"The watch takes an FM signal only", explained a Sinclair spokeswoman. "While there are a large number of FM stations in the States, there are few over here "

The watch comprises a full-function (calendar, light, alarm included) digital watch, and an FM radio All the watch functions can operate simultaneously with the radio, and the antenna is incorporated into the wristband It takes a 1½V battery, which lasts up to 20 hours The watch will sell for just under $100

QL add-ons now ready

THE FIRST of Quest International Computer Technology's peripherals for the QL (see *Popular Computing Weekly*, November 1) are due to be shipped this week

The 64kK and 128K Ram boards will be the first to be available The other disc drives, Ram boards and software, should be released at the beginning of February

Quest will initially be selling the products by mail order Details from Quest, School Lane, Chandlers Ford, Hampshire

Commodore PC at UK show

COMMODORE'S IBM PC software compatible micro – the Commodore PC is to be launched in the UK this week, at the Which Computer? Show.

The machine has a built-in display and disc drive, has 256K Ram expandable to 640K, and is expected to be priced around £2,000

Follow suit?

Why is there no joystick standard for BBC softwara.

Well respected Ultimate bring out *Jet Pac* for the Beeb Great The same company brings out *Sabre Wulf* for the Beeb Yet one offers a joystick option, the other does not. Why?

The game which spawned a thousand clones, *Manic Miner*, comes out for the BBC with no joystick option.

The same with Program Power Half of their BBC games support joysticks, the other half will only accept keyboard entry.

I wouldn't mind if all the BBC software was keyboard input only, but surely, once one company had set a precidant, the others must follow suit? Apparently not

These days any C64 game without a joystick option would be panned out of sight Why not the same for the BBC?

Michael George
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Pioneer world

Glen Counsell is both right and wrong in his article *Nightmare World*, Ziggurat December 13 He is right in questioning the new technology, right in asking whether we are capable of handling it But quite wrong in his prognosis

Not so very long ago people travelled mainly on foot to by horseback.

In the early seventies the pocket calculator arrived (Pocket? Mine was about the size of a modest transistor radio, would do *all four* functions and had the same price tag as today's ZX Spectrum). General opinion had it that they would turn all the current crop of youngstars into button-pressing cabbages

What the prophets of gloom and doom failed to take into account was that, whether you set out by car or on foot, you still have to know where you are going and how to get there Using a car or calculator, you not only get there quicker, you can indulge in a bit of exploration in the way At the risk of putting the cat amongst the pigeons I would say that the general awareness of mathematics is higher today than it has ever been – mainly due to the advent of the calculator and latterly the computer

If the new super-duper computer comes along, that can do everything faster and better than me – then let it. On philosophical grounds, I refuse to compete with those far abler than I I don't think it matters a tinkers' cuss whether the motivating Ram/Rom is composed of silicon chips, grey matter of faery rings

Surely the whole theme of Glen Counsels' article is *not* fear of the new technology It is the other bug-a-boo that currently haunts as – redundancy, which is quite a different bag of bones

D L George
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Nr Taunton
Somerset

Word perfect

The following information may be of use to any other owners of the Amstrad disc drive owners who possess the *Tasword/Amstrad* word processor together with *Tasprint*

In order to load the configured *Tasprint* fonts onto the disc you should first *Load* the initial part in from the tape ie, *Load* "Lectura.BAS" Once loaded type *:Disc* and then save to the disc The "Lectura.DAT" can be loaded in as a binary file using the format as described in Chapter 2.11 of the disc manual.

The length of each file is 5120 with the start address being different for each type of font.

Font	*Address*
Lectura	12000
Median	17120
Compecta	22240
Data	27360
Palace	32480

Once saved on to disc then *Run*"Lectura.bas" and then *Run*"Tasword.bas". This will load in the font and then the word processor

Graham C Paterson
58 High Street
Burntisland
Fife

"To turn left, you have to press Control Caps Shift and then L."

Lunar correction

Refering to the Dragon *Lunar Module* program in the December 6 issue a small omission appeared in Line 1110 This line should read

```
1110 IF F4 = 1 THEN C = 200
GOSUB 8210  GOSUB 7000
```

Ashley Watson
March
Cambridgeshire

Dragon v. BBC/QL

In response to P Arkley's letter saying he couldn't understand how the Dragon could possibly be superior to the BBC or QL (December 20 issue), try this

For £400 it is now possible – following Dragon's unfortunate demise – to purchase either a BBC model B, or QL or a full Dragon 64 system – consisting of a Dragon 64, a single 5 25 inch disc drive, the OS9 operating system and Basic 09

All three have real keyboard's (as it's only just after New Year I'll give the QL's the benefit of the doubt)

OS9 provides Unix-like commands For those who do not know Unix it is used on PDP minicomputers and allows multi-user operation and multi-tasking, and has a multi-level directory file system

Basic 09 makes BBC Basic and SuperBasic look half-baked. It allows access to all OS9's powerful commands syntax check in entry, it does not need line-numbers and line-numbers can be local to procedures It had the following control structures *If Then Else*, *Endif Loop Endloop*, *While Do Endwhile*, *Repeat Until* and *On Error Goto* It allows user-defined data types, as well as the standard integer, real, byte, string and boolean. It comes complete with a text editor that can be used with other languages such as Pascal and C Finally, Basic 09 is a semi-compiled and semi-interpreted language which gives it speed as well as versatility

Now P Arkin should have some idea of how the Dragon 64 is better than the BBC B or the QL – you can now get both for the same money

I realise that in some ways Dragon lets itself down, but for my purposes, as an A Level computer studies pupil, the Dragon is ideal.

Carl Jones
64 Bishop's Road
Whitchurch
Cardiff

Watch your memory

Regarding the recent letters about loss of memory on the QL I have run out of memory when writing programs which do not involve opening channels Thanks to D Nowotnik's helpful article I have been able to find the source of my problem The following short program illustrates the fault

```
100 CLS  DIM a$ (10,15)
110 FOR i = 1 TO 10  a$
(i) = "AAAAAA
AAAAAAAAA"
120 FOR k = 1 TO 600 130
FOR i = 1 TO 10 140 AT i,
o PRINT a$ (i,4 TO) 150
END FOR i 160 AT 18,0
PRINT k  AT 18, 10
PRINT " " AT 18, 10
PRINT PEEK L (163856)
PEEK L (163852) 170 END
FOR k
```

This will normally give an 'Out of Memory' message – just run it and watch your memory disappearing at the bottom of the screen.

The problem can be cured by altering Line 140 to

```
140 x$ = a$ (i,4 to)' AT i,o:
PRINT x$
```

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Vegas – Atari's gamble

Dafna Israeli, *still jet-lagged with the first of two reports from the US Winter CES Show. This week Hardware*

If you think it's too parky over here maybe you should have gone to the Winter Consumer Electronics Show in Las Vegas where the temperature, at least for the first couple of days, remained in the 60s and the humidity held up at a steady 60%. The Las Vegas Convention Centre – where the show took place between January 5-8 is well, huge. And it is adjacent to the Las Vegas Hilton, the biggest hotel in the world. Not a lot of people know that.

Las Vegas is big on hotels. Hotels motels, casinos – and desert.

Over 80,000 people turned up to this CES – a figure somewhat down on the last June's CES. The stars of the show were undoubtedly the new computers from Atari and Commodore. Many of the companies in the depressed US software trade are relying on these micros to put the sparkle back in what is currently a very flat market.

Before getting to grips with the new Atari and Commodore machines though, a word about Sinclair and MSX.

Sinclair showed its QL micro – the same version as the machine on sale in the UK, which will go on sale by mail-order in the US for $499 from next month. The Spectrum+ was also in evidence, but the company at present has no plans to sell it in the US. Sinclair also showed a new product – a combined wristwatch/FM radio, which it hopes to sell for under $100. There are no plans for the device to be sold in Britain.

Sinclair's watch/FM radio

Reaction to the QL in America is still very muted. The prospect of Microdrives is not setting the world alight and, although the majority of software houses view the machine as a reasonable effort, the position of most of them is fairly precarious at the moment and none seem keen to produce material for a machine which at best is seen as an also-ran outsider. Sinclair's decision to sell the machine by mail-order has also not gone down well and the launch of Commodore's C128 and Atari's ST series will make life very difficult for Sinclair.

Atari's 130ST 68000-based micro

It also makes things very difficult for the Japanese MSX manufacturers who took the opportunity of the Las Vegas show to formally launch the MSX standard in the States. Unfortunately, all eyes were on Commodore and Atari.

Under the leadership of Jack Tramiel, Atari announced a range of six new computers designed to put the once ailing micro firm back on its feet.

Reaction to Atari's ST range of low-cost 68000-based machines (see last week's magazine) was very favourable. Tramiel went out of his way to court the US software houses, and machines for software development are expected to go out by March. Machines could be in the US shops at the same time, but general feeling was that the micro was more likely to appear in the summer.

The ST comes in two forms – the 130ST with 128K Ram at $399 and the 520ST at $599. Each includes a choice of Basic or Logo as the built-in language, a 198K Rom (expandable to 320K with a 128K plug-in cartridge) including Digital Research's *Gem* and *Gem Desktop* operating systems. *Gem* and *Gem Desktop* offer the same kind of icon working environment found on machines like Apple's Lisa and Macintosh, and operate using the ST's built-in 'mouse' controller. Included also in the Rom are word-processor, file handling and a calculator. Gem presents these with icons, windowing, pop-up menues, memory management and also a real-time clock.

The machine uses a 32K bit-mapped screen with three graphics modes – 320 × 200 pixels in 16 colours, 640 × 200 pixels in four colours or 640 × 400 pixels in monochrome. The colours can be selected from a palette of 512 colours (eight levels each of red, green and blue). The machine has a built-in

communications serial port, disc controller and interface (for Atari's 3½ inch disc drive), hard disc interface and twin joystick ports – one of which is configured for the mouse.

Four display outputs are provided – TV, composite video, RGB and high-resolution monochrome monitor.

Both ST machines use the General Instruments three-channel sound chip and include a Midi standard music interface.

Atari's remaining four new computer are actually not quite so new. They are all developments from Atari's present 800XL machine. The 65XE is roughly a 64K 800XL in a new case for under $129. The 65XEM is a music version of the machine with eight sound channels and the ability to output sound through a hi-fi. The 65XEP is a portable version with built-in 5 inch 40 × 20 character display and 3½ inch disc drive. Finally, the 130XE at under $200 is a lower cost rival for Commodore's new C128, with 128K Ram in two switchable 64K blocks.



Commodore's C128 – something for everyone?

The other major news at the show was Commodore's announcement of its C128 PC and LCD portable machines. Both use developments from the 6502 8-bit processor, already used by the Commodore 64. Commodore's Amiga 68000-based machine is being further developed ("additional features are being added"). It is not expected to be seen until June CES, to go on sale in late '85/early '86.

Commodore has also decided not to take on IBM on its home ground. Its 256K IBM-compatible PC will not be sold in the US however, it will be marketed in Europe and is expected to go on sale in the UK priced around $2,000, in February.

Back to the C128. The machine is an attempt to offer something for everybody. It has 128K Ram in two switchable 64K blocks, together with a new version of Basic, Basic 7.0. In a second mode it can be a Commodore 64 – fully software and peripheral compatible with the C64, complete with the 64's 2.0 version of Basic. Finally in a third mode the C128 uses its built-in Z80 second processor to give it CP/M compatibility.

The C128 will be available in two forms. The basic form will sell for under $300 and have no built-in disc drive. A second version will have a 5¼ inch disc drive built-in. Commodore also announced a new separate disc unit to accompany the C128 – either to provide

Commodore's 1571 disc drive

a disc drive for the Basic model, or a second drive for the up-market version. In its CP/M mode the C128 is compatible with any ordinary 5¼ inch disc format CP/M software. No special disc reformatting is required.

In C128 mode the machine has 128K Ram, 48K Rom, 16 colours, two display configurations – 320 × 200 and 640 × 200 pixels. In C64 mode the machine has only 64K Ram, 16K Rom, only the 320 × 200 display format, but eight programmable sprites. In CP/M mode the machine has 128K Ram running under CP/M Plus OS version 3.0. Memory is expandable to 512K (as it is in C128 mode). The machine is then a disc-based system, with the same two display configurations of C128 mode.

The C128 has a cassette port, tv output, user port, audio I/O, composite video output, serial port, twin joystick ports, RGB output and a cartridge slot. A 'mouse' controller option is available.

Commodore's new 1571 5¼ inch disc drive to accompany the C128 offers a 0.5M unformatted capacity (350K formatted). The device is also fully compatible with the C64, Plus/4 and LCD machines. The device is intelligent, it features its own built-in 6502 processor with 2K Ram and 32K Rom. In Commodore mode it uses double sided/single density discs and is compatible with Commodore's existing 1541 and 2031 drives (although faster). In CP/M mode it uses double-sided/double density discs and boots up' in IBM System 34 format (Kaypro and Osbourne compatible).

The company's other new micro, the LCD Portable is intended as a self-contained unit, featuring its own 80 × 16 character (480 × 128 pixel) liquid crystal display and using a version of the 6502 processor. The device has a 32K CMOS Ram and a 96K CMOS Rom. The Rom includes Basic 3.6, a word processor, file manager, spreadsheet, address book, diary, monitor, calculator and memo pad. The machine also has a built-in modem and the Rom includes 300 baud communication software. In addition, the machine has an RS323 interface, Centronics printer connection, C64 seri-

The LCD portable

al interface (making it compatible with all C64 serial peripherals), barcode reader port, cassette interface and memory expansion slot. The LCD portable is battery powered.

What then of Commodore's Plus/4 and C16 micros? Both the C128 and LCD Portable are designed to be Commodore compatible. Neither are Plus/4 compatible and the disc drive, promised for the Plus/4 in June last year has yet to appear. Software support is also weak for the Plus/4 or C16 titles outside the Commodore 64 stand itself. As a result, rumours that the Plus/4 and C16 are both to be scrapped were flying around all over the place. Commodore firmly denied the rumours, instead claiming that the machines would have to be "repositioned". We shall see.

Interceptor

Place yourself at the controls of a SAM missile in this game written for the QL by Ian Williams and Steven Hollywood

Interceptor is a game based on the actual methods of use of the surface to air missiles (SAMs) as used in the Middle East some years ago

A SAM 7, made by the Russians, consisted of the guided missile itself, a launching unit and a remote guidance system. In the case of the SAM 7 this involved a small television monitor and a joystick, exactly the same as can be found on any home computer When the target was sighted the operator lined up the launch unit using physical sights in the general direction of the attacker When the sights were roughly aligned the missile was launched

As it sped towards the attacker it unravelled a long, steel wire which connected it to the television camera through which the attacking plane, or ballistic missile could be seen by the operator, who was, of course, still on the ground The object was to score a hit by manoeuvring the SAM with the joystick onto the attacker.

In this game, you are presented with a set of six bases and one central control base As the game starts, ballistic missiles appear from the top of the screen and begin to close onto your bases In the centre of the screen there is a small circle This is your sighting circle, moved using cursor keys

When a missile track enters the small circle you activate the laser controlled SAM launch by pressing the fire button or the space bar Immediately a burst of laser bits is fired from your base and the target computer checks to see if your SAM is close enough to be launched If not, then you will just have to try again When the computer has verified the targeting co-ordinates then a window opens up in the centre of the screen.

It is your job to centralise your SAM exactly so that the oncoming missile appears in the dead centre of the monitor window As soon as this position has been achieved the attack computer, which is calculating the position every millisecond, activates the proximity fuse which automatically destroys the missile and ups your score by 50 points! If, however, you permit the attacker to get too close to you, his missile will neutralise your SAM and you will get a "Negative Take-out" message

Each succeeding wave is more difficult and it can be great fun altering some of the variables to increase the explosions, speed etc Altering the value of *vel* in Line 260 will alter the speed of attack of enemy missiles while altering the *score* values in Lines 2050 and 2160 can fool everyone as to your ability!

Program Notes

Procedures form the core of the game and are called as follows.

Poster and *Message* – Output the title screen.

Dimbo – Dimensions arrays, sets up the five screens and initialises variables

Score var – Sets up the score window and increases score by 'var'.

Ground – Draws remaining bases following hits.

Airburst – Checks for available bombs and drops them

Wammo – Moves bombs & checks for hits

Base x,y – Draws gunbases & cities

Bang x,y,s – Draws explosion at centre x,y with radius s

Zap c – Removes destroyed cities.

Sights – Creates and moves circle sights, checks for fire button or space bar, activates "sam"

Sam – Launches missile, opens television window and responds to direction from operator

Death – Closes windows and ends game



```
REMark [illegible]
...
DEFine PROCedure [illegible]
...
END DEFine [illegible]

REMark
REMark ********** [illegible] **********
REMark
DEFine PROCedure [illegible]
...
END DEFine [illegible]

1950 FILL [illegible]
...
2020 END REPeat [illegible]
...
2180 END DEFine box

2190 REMark
2200 REMark ********** Score routine **********
2210 REMark
2220 DEFine PROCedure score
2230   WINDOW#small [illegible]
2240   CLS#small
...
2300 PRINT#small [illegible]
2310 END DEFine score

[illegible] REMark
[illegible] REMark ********** [illegible]
[illegible] REMark
[illegible] DEFine PROCedure [illegible]
...
[illegible] END DEFine [illegible]

2400 REMark
2410 REMark ********** [illegible] **********
2420 REMark
2430 DEFine PROCedure death
...
2470 PRINT#back,"Computer [illegible] Try again" [illegible]
...
END DEFine [illegible]

2700 DEFine PROCedure message [illegible]
...
2860 END DEFine message
```

User Groups & Micro Clubs



We want to hear from you!

In February *Popular Computing Weekly* is printing a nationwide guide to micro clubs and user groups. In order that the information is as up to date as possible, we need details of as many user clubs you can think of. If you attend a club regularly, ask the secretary of your group to send us the following information, as soon as possible.
Please sent the completed coupons to Club Index, Popular Computing Weekly, 12-13 Little Newport Street, London WC2H 7PP.

Club Name ______ Town/District ______
When does it meet (Time, frequency, day, dates) ______
Where does it meet (venue address) ______
Contact for more details (name address, phone no) ______

Year club established ______ Number of members (approx) ______
Main machines covered and special interests ______

Hardware Review

Desk space

Hardware *Mancomp MO184 Spectrum keyboard* **Price** £59 95 **Supplier** Mancomp, Unit 8, Levenshulme Trading Estate, Printworks Lane, Levenshulme, Manchester M19 3JP

The introduction of the Spectrum Plus might be thought to have knocked the add-on keyboard market on its head However, the Plus costs £50 more than the standard Spectrum and its QL-style keys aren't universally popular, so there should still be demand for upgrades

This model, the Mancomp 184 keyboard, could have been a contender, but the design is a let-down on a couple of points. Firstly, the good news, the MO184 is easy to fit All you have to do is unscrew the Spectrum's PCB, clip it into the Mancomp's base, connect the cables to the keyboard, and clip on the top

Now the bad news The MO184 is designed to take Interface One without modification, no bad thing in itself It also has a large hole to fit the power transformer, again no bad thing The big problem is that the resulting unit is ridiculously large – much wider and deeper than a Commodore 64 You'll need to clear plenty of desk space before using it

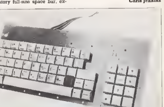
The construction also isn't very impressive, the fibreglass sheen looks cheap, although the materials are admittedly sturdy and the key legends are coloured stickers (although production models may feature screened legends)

The keyboard itself has a positive action and short key travel and features a 12-key numerical/cursor/point pad to the right of the main section There's also the obligatory full-size space bar, extended *Enter* key, extra *Shift* keys, and cursors at each end of the space bar

Additional features include a pen rest, which looks like a deformation in the casing at first sight, and 'palm rests' – presumably for mounting exotic houseplants

On the whole the Mancomp MO184, at £59 95, doesn't offer much that more attractive units don't have But if you have a big empty desk to fill up

Chris Jenkins



On-side!

Program *Football Manager* **Micro** Amstrad CPC464 **Price** £7.95 **Supplier** Addictive Games, 7a Richmond Hill, Bournemouth, Dorset.

I've got a confession to make here – I'm not one of those who has a reserved position on the terraces every Saturday. So when I was given this tape to review I thought something along the lines of 'Oh, it's that game that football maniacs sit up all night playing, the fools.' Why was it then that I finally crept into bed, my voice hoarse from croaking 'Come on you reds' and 'Goals win games Brian', at four in the morning having made the neighbours sick as parrots with all the cheering? The only answer is that Kevin Toms has stumbled onto one of the the classic game formats of all time, on a par with *Monopoly* or *Ludo*.

Take it from me, a frightening empathy with Brian Clough emerges in your soul as you take your lowly fourth division team to a giant killing triumph in the FA Cup. Despite being one of the most technically basic games still available, this will be as big on the 464 as it has been on every machine since the ZX81. For those who really don't know, it's a strategy game where you juggle with the various strengths and weaknesses of your team and try to stretch the finances far enough to buy star players and put yourself on the road to football glory. The game is made by the on-screen nail-biting highlights of each match.

Now where did I put that tape? Here we go, here we go, here we go.

Tony Kendle

Macabre

Program *Hunchback II* **Price** £7.90 **Micro** Commodore 64 **Supplier** Ocean, 6 Central Street, Manchester M2 5NS

Hunchback was one of Ocean's first hits, and now the sequel has arrived. As you will probably guess, Esmeralda has got herself into trouble again and you, being a bit of a hero, have got to guide Quasimodo through five action-packed screens to rescue her from the Belfry.

On the early screens, Quasi runs and jumps his way round the bell-tower collecting all of the small bells. However, he doesn't have things all his own way. Bats, bouncing cannon balls, moving platforms and ropes all contribute to his problems.

What I like about the game is the control you have over Quasi. Instead of just dropping to the floor with an untimely crunch when you make a mistake, you can guide the Hunchback as he is falling, in the hope of reaching him from the ground.

I know this may sound a bit like all those other platform games, but *Hunchback II* has got a few nice touches (in particular, the macabre fates that await Quasi, should he be unsuccessful, are not for the squeamish).

This game will be of special interest to those who saw the television programme "Commercial Breaks" which featured the production of *Hunchback II*.

All in all, a good game which lives up to the high standard of its predecessor.

Tom Hussey

Rivetted

Program *Hard Hat Mack* **Micro** Commodore 64 **Price** £9.95 **Supplier** Ariolasoft

This is another piece of top-selling American software with slick graphics and glossy packaging. You are *Hard Hat Mack*, a bona fide spanner-man hero. All you have to do is finish the building. Sounds easy? Well, while you're racing round the girders you have to avoid certain nasty people, namely the neighbourhood punks and Osha Crew-cut, clip-board, and no sense of humour, Osha is "Living proof of the banality of evil".

There are six, totally different, platform-like levels in the game and you are allowed to start on any of the first three (a good idea if you are not a supergamesman).

On the first level you have to finish the steelwork. This can be achieved by filling the gaps in the framework with girders. After accomplishing this, you will have to obtain a rivet-gun in order to rivet the girders into place. Springboards, chains and elevators are available to aid your ascent. All through the play bonus points can be gained by collecting various items of equipment.

On the second screen, a number of toolboxes need to be collected by making your way round the girders along the conveyor belts and up the hoist.

At the third level you have to get all the steel blocks and drop them into the rivet machines. As on the other levels, many nasties will try their hardest to get in your way (including a port-a-potti).

Hard Hat Mack is a true member of the platform family of games. Its novelty lies in a series of 'cute' features which make it fun to play. A good game.

Tom Hussey

Labyrinth

Program *Fantasy Fight* **Price** £8 95 **Micro** Dragon 32 **Supplier** Cable Software, 52 Limbury Rd, Luton, Beds LU3 2PL

Fantasy Fight is a labyrinthine arcade game The said labyrinth consists of 38 seperate rooms each containing its own complement of hazards and rewards The object is to collect bags of gold and defeat the monsters (20 different varieties) before energy runs out, a bit like *Hall of Things* To defeat the monsters, it is necessary to have the appropriate weapons or spells

The game is controlled by using both joystick and the keyboard, although an option of all keyboard is included. Movement is controlled from the joystick whilst weapons (where available) are obtained by keyboard. To make this easier, an overlay is provided which fits above the numeric keys used each for a specific weapon

The instruction leaflet is comprehensive but printed in red on bright yellow paper (in minute type to boot) which does not help its legibility

There is sufficient variation to make the game, once mastered, easy and interesting to play, although the initial moves (which follow a standard pattern) tend to get monotonous with familiarity. The graphics are fussy with a very crowded screen containing the labyrinth room and status data The effect of being zapped is a bit over the top with flashing colour changes which make the reset screen difficult to absorb quickly

Overall, the game is absorbing and can hold the interest for quite a while, let down a little only by the display

Derrick Trueman

Language

Program *Pascal* **Micro** Amstrad CPC 464 **Price** £29.95 **Supplier** Amsoft, Brentwood House, 169 Kings Road, Brentwood, Essex, or direct from Hisoft

Let's start off by saying that I think this is an excellent program and worth every penny of its superficially hefty price, but some people will have difficulty finding a use for it

Machine code has the advantage of flexibility and speed, but it is an absolute nightmare to reproduce complex statements such as x=COS y/((SQRT m) (LN s/y)) or the extensive string handling of adventure programs which can be succinctly expressed using Basic An ideal compromise for many would be fast compiled languages – Pascal, for example – on home micros A Ram based system only goes halfway towards solving the problems since it has to be loaded in before you can run a program.

However, there is one area where this Pascal has an obvious and very important use. Many people justify their purchase of a home computer as an aid to getting a job or helping them with it But in practice a knowledge of, say, Sinclair, Basic is in little demand Pascal on the other hand is a widely used professional language and has all the advantages of being designed to encourage structured programming (it was the source of the *Procedure* command used in BBC Basic) as well as being more rigidly standardised.

Hisoft's version also gives you a useful insight into the way mini – and mainframes often work with separate editors and a great distinction between the operating system and the language – something that comes as a bit of a shock to home micro owners where the whole thing is fudged into the Rom

The fact is it is very different to the sort of programming you will be used to and may seem like wallowing through mud for the first few days, which is why I regretted the absence of the *Tutorial Guide To Hisoft Pascal* in the review copy The Amstrad manual we were sent, SOFT 155, is designed to document the features available and is impressively omniprehensive in its scope but a little advanced for a newcomer to the language.

The version is as 'almost full' implementation with the major limitation being that, being tape based, files cannot be handled in the normal way and are replaced by *Tape in* and *Tape out* commands. This is easy to adapt to for those learning the language but could make converting programs from other machines a nuisance To compensate there are many predefined procedures to enable access to the advanced features of the computer

Once loaded there is 20K available in which to program which is quite healthy for most things but can limit data handling programs. The tape also carries the marvellous bonus of turtle graphics which can be used within your Pascal programs

An extremely impressive package

Tony Kendle

Action

Program *Raid on Bungeling Bay* **Price** £9 95 **Micro** Commodore 64 **Supplier** Ariolasoft Retail.

Carrying on in the same genre as *Beachhead*, this game is a fast-action strategy-shoot-out. You are a "highly skilled helicraft pilot" and have to destroy six war factories of the Bungeling Empire These can be found amongst a collection of well-protected islands

Tanks anti-aircraft guns, battleships and planes have to be engaged and destroyed if you are going to succeed on the mission. The strategic element of the game arises from the need for you to protect your own aircraft carrier from enemy attack – every so often you have to land for repairs and more ammunition

The huge playing area covers 100 screens, and radar is used to reveal enemy positions in the surrounding nine screens The helicraft controls are very realistic in that your perspective changes with direction as you fly around the 360 degree scrolling screen

I found the action very fast and furious especially when being attacked by jet fighters firing heat-seeking missiles It really gets the adrenalin going. The price may seem a bit steap, but this can be partly accounted for by the superb graphics that we have come to expect from USA imports The attractive packaging and first class presentation add up to a truly professional game

Tony Hassey

Pot black

Program *Snooker* **Micro** Amstrad CPC464 **Price** £7 95 **Supplier** Amsoft, Brentwood House, 169 Kings Road, Brentwood, Essex

Amsoft have slipped out their own version of Snooker in the face of the imminent and long awaited release of *Steve Davis Snooker* by CDS CDS were responsible for the only really fast and playable version of pool for the Spectrum so it will be interesting to see how well Amsoft's attempt compares

On the positive side, unlike many earlier attempts, this is a full and complex representation of snooker with a strict adherence to the rules, the correct number of balls, and onscreen display of scores, foul shots etc There is also a one player practice mode and, if you are as bad at potting as I am, the useful option of playing with as few as six reds The coloured balls can be numbered on screen for people with a green monitor or who know nothing of the order in which to pot the colours. There is extremely precise control over the strength of shot as well as the ability to add all sorts of spins to the cue ball

On the negative side it is a very slow game and because of this is inherently unsatisfactory When you think about it the number of real time calculations to be made together with the number of moving graphics to control probably make this inevitable Perhaps a full version of *Snooker* is something that should best be left to Psion on the QL, unless CDS prove me wrong

Tony Kendle

Child's play

Program *Learning With Leeper* **Price** £9 95 **Micro** Spectrum 48K **Supplier** Software Projects Limited, Bearbrand Complex, Allerton Road, Woolton, Liverpool L25 7SF

Leeper is intended for ages three to six, but the packaging also claims 'No adult supervision required' I would feel less than happy leaving a three year old unsupervised with a computer, and when just one key press returns the child to the title screen, you have a recipe for tears. A bad start.

To the four games themselves None offers much in the way of reward for a successfully completed task *Dog Count* is a test in matching the number of bones to dogs Do this correctly and the dogs wag their tails with an accompanying tune, but give too many bones and you still get the wagging tails *Balloon Pop* is a letter matching game with even less reward.

Leap Frog's aim is to guide a frog round a simple maze ahead of a pursuing centipede, but as this simply passes over you if it reaches you there seems to be little point. Finally, *Screen Painting* is a paintbox 'without all the mess' – a classic example of the computer taking over where it is not needed. As this is not overly simple to use it will definitely need parental supervision, unlike paper and crayons.

Doubtless some parents will think that it's never too early to introduce their child to the micro, but at this age a few basic teaching aids and some active parental involvement would prove a lot more effective – and cheaper!

John Minson

Superb

Program *Jewels of Babylon* **Micro** Amstrad CPC464 **Price** £6 00 **Supplier** Interceptor Micro's, Linden House, The Green, Tadley, Hants

To some companies the term 'graphic adventure' seems to be an excuse to call up a load of slow and intensely boring box-like pictures and use that as an excuse to avoid any pretence of atmosphere in the text Fortunately Interceptor have gone down a very different road and have built themselves a pretty good reputation for adventures in the process *Jewels of Babylon* should greatly enhance this image because, in terms of plot, I found it a huge improvement on *Forest at the World's End* which was really quite simple and written in a minimalist style

Not only are there more, and more interesting, puzzles in this game but the author has also allowed himself the luxury of including the occasional adjective or line of descriptive prose to liven things up.

To be honest it's not Level 9 and you still get annoying sequences like when in the rowboat "ROW SOUTH" – "I DON'T UNDERSTAND", "GO SOUTH" – "TRY ROWING" etc On the whole though the text handling is pretty reasonable but what about the graphics?

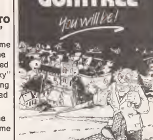
They are absolutely superb, probably the best I've seen, and the colour restraint due to the use of four colour mode somehow adds to their charm. They appear extremely quickly too

It is a tribute to Interceptor, and I suppose a tribute to Amstrad, that when playing the game in the office everyone who walked past stopped short in admiration and demanded to know what the program was If Interceptor keep this up they can forget about their arcade games

The other good point is that it is refreshingly cheap for a piece of Amstrad software which may be the start of a trend towards more realistic prices

Tony Kendle


UPPER
GUMTREE
You will be!



A touch of genie-us

***Graham Taylor** interviews Hanan Samara – proof that games programs aren't all written by adolescent males*

Hanan Samara is a computer programmer who also happens to be Arabic, have a Masters degree in Maths is setting up a software house and significantly or otherwise, is a woman. Whilst women have entered the computer industry doing PR jobs and, here and there, some graphic design, there are few actually programming anywhere and fewer still programming games.

Talking to Hanan she is, interestingly as confused by her flag-bearing status as anyone else. "For a long time I didn't realise I was one of the few woman in this industry, I never thought of it until it was pointed out to me."

Undoubtedly there is a link between the situation in the computer industry and the wider anomaly in the balance between men and women taking science subjects to a high level, but Hanan also sees some differences within computer programming itself. "You need a lot of patience for Assembler language which is vital for games, and it can be pretty tedious unless you have a certain kind of mind. I think there are more woman working in high level languages, also in writing for home computers, ie, games where you need to know a lot of little bits and pieces. It may be that that makes some sort of difference."

Hanan first learnt Fortran as a tool for her Masters Degree. "I needed a computer language as part of a punch card scheduling project, then I started work on text editors for International Computer Systems where I also picked up Z80 code." The move to games happened when Hanan joined Thorn Emi where she was offered a job as program designer and project leader.

She remembers her first experience of a computer game and the enthusiasm she felt then remains now. "I remember it was a child's game based on *Humpty Dumpty*. It was like a little movie and I totally captivated by it."

I asked Hanan to try and explain the appeal of writing computer games. "What excites me most is the way something which forms as an idea in your mind can gradually, with many obstacles to be overcome, become reality."

What is the actual process of game creation. "Well, the first thing is the idea which means the setting, plot and generally the way it works as a game, next comes a storyboard where the sequence of events is worked out and then you can actually design the sprites for the different characters." This, it turns out, is the time consuming process. "Actual coding can happen relatively quickly, except that you find some of your ideas are unworkable or that somehow all the good ideas in your storyboard aren't any good on screen."

Probably the most exciting of the games Hanan has worked on is *Jinn Genie*, a multiscreen game recently issued by Micromega which deserves to do well. It mixes some basic arcade concepts with some original thoughts and some unusual character design, "Well, *Jinn Genie* is a game that incorporates many of the basic myths and children's stories of my culture – I am an Arab, a Palestinian, and all the ideas of genies and so on are familiar to me."

The game involves magic carpets, castles, magic keys, genies, baskets in which the genie may be trapped. It looks Arabic in terms of the design, and as a game it plays well – it has been deliberately designed so that it should be possible to get through the whole game at the easiest level after only a few plays, which is, when you come to think about it, rather unusual for an arcade game.

"In designing the whole game I worked backwards, the first idea is that you must put the genie – the Ifreet – into a bottle, then you ask yourself, well, where is the Ifreet? All the themes of the Ifreet, Desert and Bottle came from Sinbad, at first I planned a sea version, but for various reasons making it land-based gradually seemed a better idea.

"I always make sure it is possible to complete the game quite early on, but gradually it gets more and more difficult – to a certain extent that reflects the fact that most of my previous work has been designed for the States where they don't like things to be too difficult."

The game was produced by Hanan in her latest role as joint owner of Dalali, a company she formed with another ex-Thorn employee Adrian Wadey – the objective is to do contract work on program design and development for other companies as well as conversions from one machine to another of successful games. "Obviously, we'll also produce our own games and I'd like to produce some really good educational software."

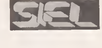
Dalali is to concentrate on the Commodore and the Spectrum as Hanan sees little immediate future for other machines. "I haven't even touched a QL because of the microdrives, the Amstrad is a nice looking machine but we won't work with it yet, equally MSX could be OK, but the price will have to come down."

Future projects suggest that Dalali is a company intending to explore some of the less obvious programming routes. "I'd like to do some spin-offs from board games – we're talking to one company in particular."

My attempt to draw Hanan on her projects reveals a reluctant caution.

"Do you know, I never talk about plans too specifically any more. I sometimes think that people's ideas float up in the air and float into other people's heads." Never have I heard plagiarism so poetically described.

Thomas Dolby's Micro Music Competition



Popular Computing Weekly offers you a chance to win over £2,000 worth of Siel synthesiser equipment to connect to your micro

The Prizes

1st Prize ***Siel's new DK600 synth*** **– Value £1,200**
The DK600 is an exciting new six-voice polyphonic programmable MIDI synthesiser which we are giving away complete with software packages to link it to either a Commodore 64, BBC or Spectrum computer (whichever is appropriate for the winner).

2nd Prize ***Siel MK900 MIDI Music keyboard*** **– Value £600**
The MK900, which we reviewed in *PCW*, December 6, is Siel's Midi Home Computer music keyboard which we are giving away together with Midi interface and software to link it to a Commodore 64, BBC or Spectrum micro

3rd Prize ***Siel CMK 49 Commodore 64 music keyboard plus Midi interface*** **– Value £225**
This is a new product from Siel offering a full-feature music add-on for your Commodore 64

Extra – 20 copies of Island Logic's *The Music System* for the runners-up

MUSIC
VOUCHER
1

The Competition

THE prizes will be awarded for the best original music compositions written using a home micro.

What we want you to do is to use your home computer to produce an original music recording. Entrants must submit:

* A tape or disc containing the software program or programs used to produce the composition.
* An explanation in less than 1,500 words of the program, how it was written, what it does, and what you have tried to achieve.
* Wherever possible we would like you to provide a printed listing of your music program and composition.
* We would also like you to send a cassette tape recording of your composition.

Some guidelines

COMPUTERS are increasingly being used in professional music making and it is possible to link all sorts of musical instruments to a home micro – drum machines, synths, and so on. The winning entries though will be likely to have been written and played using just an ordinary home micro. You may use any other equipment you wish – for example, a tape recorder to multi-track the finished tape. Any commercially written home micro software packages may also be used, but their use will be taken into consideration.

We are looking more for quality of original composition, good ideas, and some programming skill. At the end of the day, though, it must be music to our ears! Different micros have different music facilities and that also will be taken into account. Don't be put off just because your Spectrum isn't very loud!

The Judges

The competition will be judged by a panel of experts which includes:

Thomas Dolby
Vince Hill (Siel)
Mark Jenkins (*Melody Maker*)
Graham Taylor (*Popular Computing Weekly*)

The decision of the judges will be final.

How to enter

TO enter you must fill in the form and send it together with your tape(s), listings and/or discs containing your finished composition and explanatory notes, to: Thomas Dolby's Micro Music Composition, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP. At the same time you must also include four out of five special Micro Music vouchers.

All entries must reach us by midday on March 14 and the winners will be announced in April.

Please find enclosed my entry for Thomas Dolby's Micro Music Composition.

Name ....
Address ....
....
....
....
....

Micro used ....
Other hardware used ....
....
Any commercial software packages used ....
....

Lunar-tics

A useful program for the New Year – Moon Calendar
by ***Maurice Gavin***

This program for the ZX Spectrum produces a calendar with a difference. Not only does it give a correct printout for any month from 1950 to 2050, but the phase of the Moon for each day in that month is also drawn. The program correctly shows the day of the week ie Sunday, Monday etc, against the date and the total number of days in each selected month including leap-years.

Regarding the Moon's phase, the program has been optimised to give correct results typically within a day of the correct phase. This error will increase to about 2 days towards the year 2050 (if this unduly concerns you!) In reality the motion of the Moon about the Earth is extremely complex so a simple empirical formula from Lines 350 to 390 is used here which is adequate for the purpose.

In the printout to the screen, the waxing or "growing" Moon from new moon to full moon (circular disc) is coloured white (Ink 7). The waning or "shrinking" moon from full to new again is coloured cyan (Ink 5). The young waxing crescent, like a *C* but backwards, is only visible at dusk in the Western skies while the old waning crescent, like a letter *C*, will only be seen before dawn in the Eastern skies. Full moon can be seen throughout the night and on these occasions astronomers forsake their telescopes for indoor pursuits due to the Moon's sky-glare. The new and full moon are the first and last of each monthly cycle that are coloured white in the display via Lines 410 and 420.

Those near tidal waters can use the calendar to predict the tides. As a guide, using London Bridge as an example, high tide occurs within about an hour of 1pm and 1am for both new and full moon. These times get progressively later each day until high tide occurs about 6pm and 6am when the Moon is "half full" like a letter *D* or *D* backwards at first and last quarter moon respectively. Times vary dramatically by several hours in different UK ports so consult your local coastguard station to find the "constant" with reference to London Bridge.

Program Notes

The Bolean logic in the variable *J* gives a modified "julian day" (JD) number for the first day of the selected month. Each day has a unique JD number and in this program it is just used to identify the starting day of the month via the variable *Q*, ie, Sunday, Monday, etc. The variable *Moend* identifies the number of days in the selected month allowing for leap-years at four year intervals. This is used to set the length of the *For/Next d* loop.

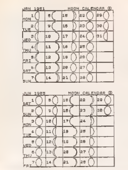
The Moon's phase is drawn with two curved lines via variables *P* and *C*. The part of the Moon nearest to the Sun is drawn first as a semicircle via *P* and represents the Moon's limb or edge. The terminator or sunrise/sunset line drawn via *C* varies from a straight line to a semicircle curved to the left or right. The program correctly mimics the foreshortening effect as this terminator line approaches new or full moon. This line advances more rapidly about the quarter moons as the sample displays show.

It will be noted the whole program, except for a couple of title REM statements, has been typed with the Caps Lock set for upper case lettering. Do so by pressing Caps shift and key *2* at the same time. The *Rem* statements have been set in Inverse Video for clarity only. The program has the option to *Copy* the calendar on to the ZX printer via Line 550. By the addition of the following extra program line the Spectrum will automatically compute and *Copy* to the printer a complete calendar for any given year. Input *1* to start month at January. Start program with *Run Enter*.

515 Lprint: Copy: Cls: Let M=M+1: Go To 80.

The program can be *Saved* with *Go to 600* as a direct command and will autoload from tape with *Load""* or *Load "MOONCAL"*, *Enter*. The *Poke* in Line 60 sets the upper case lock so that the *Inkey$* commands (in upper case) in Lines 550 and 560 are identified.

```
  10 [illegible]
  20 LET N$="MOON CALENDAR"
  30 REM Maurice Gavin FRAS
       © copyright 1984
  40 [illegible]
  50 BORDER 0: PAPER 0: CLS
  60 BRIGHT 1: INK 9: POKE 23658
,8
  70 INPUT "YEAR ",Y,"MTH NO ",M
  80 IF Y<1950 OR Y>2050 OR M>12
 OR INT M<>M THEN GO TO 70
  90 PRINT "JANFEBMARAPRMAYJUNJU
LAUGSEPOCTNOVDEC"(M*3-2 TO M*3),
 100 PRINT " ",Y,N$
 110 CIRCLE 243,172,3
 120 CIRCLE 247,172,3
 130 [illegible]
 140 INK 2: FOR F=0 TO 7: PLOT 0
,F*24-1: DRAW 255,0: NEXT F
 150 FOR F=1 TO 5: PLOT F*46+10,
0: DRAW 0,166: NEXT F
 160 PLOT 0,0: DRAW 0,166: INK 9
 170 [illegible]
 180 LET C$="202121221212"
 190 LET D$="SATSUNMONTUEWEDTHUF
RI"
 200 LET MOEND=29+VAL C$(M)-(1 A
ND M=2 AND Y/4<>INT (Y/4))
 210 REM ------------------------
 220 LET J=INT (365.25*(Y-(M<3))
)+INT (30.6001*(M+1+12*(M<3)))-I
NT (Y/100)+INT (Y/400)
 230 [illegible]
 240 LET Q=J-7*INT (J/7)+1
 250 INK 6: FOR F=1 TO 7
 260 LET QF=Q+F
 270 IF QF>7 THEN LET QF=QF-7
 280 PRINT AT F*3,0;
 290 PRINT D$(3*QF-2 TO 3*QF)
 300 NEXT F
 310 [illegible]
 320 LET XX=40: LET YY=20
 330 FOR D=1 TO MOEND
 340 [illegible]
 350 LET R=10: LET MO=29.73
 360 LET N=VAL "0202244578 9A"(M)
 370 LET PH=(Y-1930)*11-150+N+D-
1
 380 LET PHMO=PH/MO
 390 LET PH=(PHMO-INT PHMO)*MO
 400 [illegible]
 410 LET P=PI: INK 7
 420 IF PH>MO/2 THEN LET P=-P: I
NK 5
 430 PRINT AT YY/8-1,XX/8-3;(" "
AND D<10),D
 440 LET MO4=MO/4: LET C=PH-MO4
 450 IF C>MO4 THEN LET C=C-MO/2
 460 PLOT XX+5,166-YY: DRAW 0,20
,P
 470 DRAW 0,-20,2.5*ATN ((PI/150
)*C*25)
 480 [illegible]
 490 LET YY=YY+24: IF YY>170 THE
N LET YY=20: LET XX=XX+48
 500 [illegible]
 510 NEXT D
 520 [illegible]
 530 PRINT #0;"PRESS COPY/DATE"
 540 BEEP .1,10: PAUSE 0
 550 IF INKEY$="C" THEN COPY
 560 IF INKEY$="D" THEN RUN
 570 GO TO 540
 580 [illegible]
ECLIPSEsoft 79 Ardrossan Gardens
Worcester Park, Surrey KT4 7AX.
 590 [illegible]
 600 SAVE "MOONCAL" LINE 1
```



FEB 2024 MOON CALENDAR

1 THU	8	15	22	29
2 FRI	9	16	23	
3 SAT	10	17	24	
4 SUN	11	18	25	
5 MON	12	19	26	
6 TUE	13	20	27	
7 WED	14	21	28	

Variable names –

```
N$     program title
Y      year (INPUT)
M      month (INPUT)
C$     modulo+28=days in month
D$     days of week
MOEND  month end day no
J      julian day no
G      day of week no
GF     1 to 7 day nos
XX     print/plot hor(x) coords
YY     print/plot vert(y) coords
D      days in month (F/N loop)
R      moon (modulo code)
MO     moon's period in days
N      modulo moon to month
PH     moon's phase in days
P      +/-PI=moon's limb
C      moon's sunrise/set line
```

Taking a chance

Chance your luck at dice throwing with your CPC 464

by Bill Simister

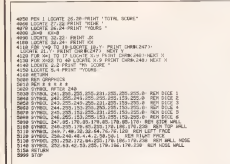
You have got into a game of throwing dice with your new Amstrad computer. An interested passer-by peers over the wall at each of the throws.

This program is simple, but shows how easy it is to make UDGs on the Amstrad. It also serves to show how to produce random results very easily, and gives a simple routine for the use of inputs.

Program Notes

10-70	Sets the colours, and introduces Gosub routines
100-350	Throws the dice (randomly) at one side
360-570	Converts the dice back to numbers for scoring, and prints them.
580-640	Plays a tune, prints the score, and changes the dice-throwing location, as well as the passer-by
1300-1350	Throws the second set of dice (randomly) at the other side
1370-1570	Converts the dice back to numbers, and prints them.
1580-1640	Plays a tune, prints the score, and decides who is the winner
2000-2040	Offers another game, and re-arranges the scen for the next game
4000-4190	Produces the screen lay-out.
5000-5180	Produces the characters

```
10 REM DICE THROWING
20 REM * * * * * * *
30 BORDER 9 INK 1,0: INK 0,22: CLS
60 GOSUB 5000
70 GOSUB 4000
100 REM *GAME*
110 REM * ** *
120 PEN 3:LOCATE 12,8:PRINT CHR$(249);CHR$(250)
130 PEN 1 LOCATE 12,9 PRINT CHR$(251);CHR$(252)
300 A$=CHR$(241)+CHR$(242)+CHR$(243)+CHR$(244)+
 CHR$(245)+CHR$(246)
310 RANDOMIZE TIME
320 M=INT(RND*6)+1
330 N=INT(RND*6)+1
340 O=INT(RND*6)+1
350 FOR X=1 TO 12:LOCATE X,11 PRINT" ";MID$(A$,
 M,1) FOR Y=0 TO 20 NEXT Y NEXT X
360 IF M=1 THEN LOCATE 11,2 PRINT 1
370 IF M=2 THEN LOCATE 11,2 PRINT 2
380 IF M=3 THEN LOCATE 11,2 PRINT 3
390 IF M=4 THEN LOCATE 11,2:PRINT 4
400 IF M=5 THEN LOCATE 11,2 PRINT 5
410 IF M=6 THEN LOCATE 11,2 PRINT 6
420 SOUND 1,50,20
430 FOR X=1 TO 11 LOCATE X,13:PRINT' ",MID$(A$,
 N,1) FOR Y=0 TO 20 NEXT Y NEXT X
440 IF N=1 THEN LOCATE 13,2 PRINT "+1"
450 IF N=2 THEN LOCATE 13,2 PRINT "+2"
460 IF N=3 THEN LOCATE 13,2 PRINT "+3"
470 IF N=4 THEN LOCATE 13,2 PRINT '+4"
480 IF N=5 THEN LOCATE 13,2 PRINT "+5"
490 IF N=6 THEN LOCATE 13,2 PRINT "+6'
500 SOUND 1,100,20
510 FOR X=1 TO 13:LOCATE X,15:PRINT' ";MID$(A$,
 O,1) FOR Y=0 TO 20 NEXT Y NEXT X
520 IF O=1 THEN LOCATE 15,2 PRINT "+1"
530 IF O=2 THEN LOCATE 15,2 PRINT "+2"
540 IF O=3 THEN LOCATE 15,2 PRINT "+3"
550 IF O=4 THEN LOCATE 15,2 PRINT "+4"
560 IF O=5 THEN LOCATE 15,2 PRINT "+5"
570 IF O=6 THEN LOCATE 15,2 PRINT '+6"
580 SOUND 1,150,20:FOR X=0 TO 20 NEXT X
590 A=M+N+O LOCATE 17,2 PRINT " ="A
600 LOCATE 3,22 PRINT "YOUR GO NOW.'
610 PEN 3 LOCATE 2,25 PRINT "PRESS M FOR DICE "
 :PEN 1
615 L$=INKEY$: IF L$='' THEN GOTO 615
620 IF L$='M" OR L$='m" THEN LOCATE 2,22:PRINT
 "                 ":LOCATE 2,25 PRINT
 "                  "
630 LOCATE 12,8 PRINT "  " LOCATE 12,9 PRINT CH
 R$(248);CHR$(248)
640 PEN 3 LOCATE 24,8:PRINT CHR$(249);CHR$(250)
 PEN 1 LOCATE 24,9 PRINT CHR$(251);CHR$(252)
1300 A$=CHR$(241)+CHR$(242)+CHR$(243)+CHR$(244)
 +CHR$(245)+CHR$(246)
1310 RANDOMIZE TIME
1320 P=INT(RND*6)+1
1330 Q=INT(RND*6)+1
1340 R=INT(RND*6)+1
1350 FOR X=40 TO 26 STEP-1:LOCATE X,11:PRINT
 MID$(A$,P,1);" ' FOR Y=0 TO 20 NEXT Y:NEXT X
1360 IF P=1 THEN LOCATE 11,4 PRINT 1
1370 IF P=2 THEN LOCATE 11,4 PRINT 2
1380 IF P=3 THEN LOCATE 11,4 PRINT 3
1390 IF P=4 THEN LOCATE 11,4 PRINT 4
1400 IF P=5 THEN LOCATE 11,4 PRINT 5
1410 IF P=6 THEN LOCATE 11,4 PRINT 6
1420 SOUND 1,50,20
1430 FOR X=40 TO 25 STEP-1 LOCATE X,13:PRINT
 MID$(A$,Q,1),' ":FOR Y=0 TO 20 NEXT Y NEXT X
1440 IF Q=1 THEN LOCATE 13,4 PRINT "+1"
1450 IF Q=2 THEN LOCATE 13,4 PRINT "+2"
1460 IF Q=3 THEN LOCATE 13,4 PRINT "+3"
1470 IF Q=4 THEN LOCATE 13,4:PRINT "+4"
1480 IF Q=5 THEN LOCATE 13,4:PRINT "+5"
1490 IF Q=6 THEN LOCATE 13,4 PRINT "+6'
1500 SOUND 1,100 20
1510 FOR X=40 TO 27 STEP-1 LOCATE X,15:PRINT
 MID$(A$,R,1)," ' FOR Y=0 TO 20 NEXT Y NEXT X
1520 IF R=1 THEN LOCATE 15,4 PRINT "+1"
1530 IF R=2 THEN LOCATE 15,4 PRINT "+2"
1540 IF R=3 THEN LOCATE 15,4 PRINT "+3"
1550 IF R=4 THEN LOCATE 15,4 PRINT "+4"
1560 IF R=5 THEN LOCATE 15,4 PRINT "+5'
1570 IF R=6 THEN LOCATE 15,4 PRINT "+6"
1580 SOUND 1,150,20 FOR X=0 TO 20 NEXT X
1590 B=P+Q+R LOCATE 17,4 PRINT " ="B
1600 IF A=B THEN LOCATE 2,17 PRINT "IT'S A DRAW"
1610 IF A<B THEN LOCATE 2,17 PRINT 'YOU WIN" KX
 =KX+1 LOCATE 32,24 PRINT KX
1620 IF A>B THEN LOCATE 2,17:PRINT 'I WIN' JX=
 JX+1 LOCATE 32,22 PRINT JX
1630 FOR X=100 TO 50 STEP -5:SOUND 1,X,10 NEXT X
1640 FOR X=50 TO 100 STEP 5 SOUND 1,X,10 NEXT X
2000 PEN 3 LOCATE 2,21 PRINT "PRESS P TO GO AGA
 IN' PEN 1
2005 P$=INKEY$  IF P$="" THEN GOTO 2005
2010 IF P$='P" OR P$='p" THEN LOCATE 11,2 PRINT
 "            " LOCATE 11,4:PRINT "            ",
 LOCATE 2,21 PRINT "                          ":L
 OCATE 2,17 PRINT "            '
2020 LOCATE 13,11 PRINT '  ":LOCATE 12,13:PRINT
 "  " LOCATE 14,15 PRINT "  ":LOCATE 25,11 PRINT
 "  ' LOCATE 24,13 PRINT "  " LOCATE 26,15 PRINT
 "  "
2030 LOCATE 24,8 PRINT "  ":LOCATE 24,9 PRINT C
 HR$(248),CHR$(248)
2040 GOTO 100
4000 REM SCENE
4010 REM * * *
4020 PEN 3 LOCATE 28,2 PRINT '*THROWING*"
4030 LOCATE 29,3 PRINT "*  **  *"
4040 LOCATE 30,4:PRINT "*DICE*"
```



```
4050 PEN 1 LOCATE 26,20:PRINT 'TOTAL SCORE"
4060 LOCATE 27,22 PRINT "MINE '
4070 LOCATE 26,24:PRINT "YOURS "
4080 JX=0  KX=0
4090 LOCATE 32,22: PRINT JX
4100 LOCATE 32,24: PRINT KX
4110 FOR Y=9 TO 18:LOCATE 18,Y: PRINT CHR$(247):
 LOCATE 21,Y: PRINT CHR$(247)  NEXT Y
4120 FOR X=1 TO 17 LOCATE X,9 PRINT CHR$(248):NEXT X
4130 FOR X=22 TO 40 LOCATE X,9 PRINT CHR$(248) NEXT X
4140 LOCATE 2,2 PRINT "MY SCORE "
4150 LOCATE 5,4 PRINT "YOURS
4160 RETURN
5000 REM GRAPHICS
5010 REM * * * * *
5020 SYMBOL AFTER 240
5030 SYMBOL 241,255,255,255,231,255,255,255,0: REM DICE 1
5040 SYMBOL 242,255,249,255,255,255,159,255,0  REM DICE 2
5050 SYMBOL 243,255,249,255,231,255,159,255,0  REM DICE 3
5060 SYMBOL 244,255,153,255,255,255,153,255,0: REM DICE 4
5070 SYMBOL 245,255,153,255,231,255,153,255,0: REM DICE 5
5080 SYMBOL 246,255,153,255,153,255,153,255,0: REM DICE 6
5090 SYMBOL 247,85,170,85,170,85,170,85,170: REM SIDE WALL
5100 SYMBOL 248,255,170,85,255,170,106,170,230  REM TOP WALL
5110 SYMBOL 249,7,40,32,32,64,76,76,128  REM LEFT FACE
5120 SYMBOL 250,240,40,4,4,2,50,50,1  REM RIGHT FACE
5130 SYMBOL 251,252,172,84,255,170,106,170,238  REM WALL NOSE
5140 SYMBOL 252,63,42,53,255,170,106,170,230  REM NOSE WALL
5150 RETURN
5999 STOP
```

Minimum points

*Graph plotting with tears on the BBC B with the aid of **Michael Poynar***

All 'A' Level students of mathematics will know the pleasure/tedium of graph sketching a formula $y = f(x)$. One way of finding the shape of a graph is to pick some points, work out the corresponding y values and plot them on the axes. The trouble is how do you know how to join them together? Unless you take a lot of points you could get two points either side of a hump and mistake it for a straight line.

Another way is to observe when y values are very big, small, positive and negative. In addition to this, one must look for asymptotes (where the line gets closer to a particular value but never reaches it), maxima (humps) and minima (troughs). This is done using the process called 'differentiation'. This is re-arranging the formula in a special way and then finding when the new formula is zero. I will not go into the theory of this method but it takes a long time.

The computer program uses the first method because it is by far the easiest to reduce the process to repeated logical operations. Every point chosen along the x-axis represents a single pixel, so 1279 values are chosen. By hand, this would take a long time even with a pocket calculator. The computer however takes only a few seconds to a minute depending on the complexity of the formula. The program takes each point, works out the y value and displays it on the screen at the nearest pixel. Even with high-resolution graphics, there will be gaps between these points – especially on a steep line – so a straight line is drawn between adjacent points to give the impression of a smooth curve.

The gap between the values put into the equation is calculated when the limits on the axes are entered, eg. if the x-axis starts from −8 and ends at 10, then the step between x values is 16/1279 = 0125, which as a general formula is (X2 - X1)/1279. The computer can then draw the axes on the screen by calculating where zero would be on each direction. The lines are calibrated by marking every unit with a small gap in black. Now the drawing of the graph takes place. For all the x values, the formula is calculated at Line 300 and the answer is scaled and positioned on the axes using the ratio between the number of pixels and the limits of the axes.

The user can then continue by pressing any key and has the option to draw the graph again with the axes enlarged or reduced.

```
   4 REM ***************************
   5 REM *                         *
   6 REM *    PROGRAM TO DRAW      *
   7 REM *    THE GRAPH OF A       *
   8 REM *     MATHEMATICAL        *
   9 REM *    FUNCTION y=f(x)      *
  10 REM *                         *
  12 REM *  (C) MICHAEL POYNER     *
  13 REM *                         *
  15 REM ***************************
  20 LET F=0 : LET FP=0 : LET A$=""
  22 MODE 1
  25 PRINT TAB(10,5);"GRAPH PLOTTER PROGRAM"
  26 PRINT TAB(10,6);"---------------------"
  29 PRINT
  30 PRINT TAB(3,13);"Do you want to see the INSTRUCTIONS "
  32 PRINT TAB(3,15);"on how to use this program ?"
  35 PRINT:PRINT
  36 INPUT "PLEASE ENTER <Y>ES OR <N>O ",A$
  40 IF A$="" THEN GOTO 36
  45 IF LEFT$(A$,1)="Y" THEN GOSUB 2000:GOTO 40
  50 IF LEFT$(A$,1)="N" THEN GOTO 100
  55 GOTO 36
 100 INPUT "LOWER LIMIT FOR X-AXIS ",X1
 105 INPUT "UPPER LIMIT FOR X-AXIS ",X2
 110 IF X1<X2 THEN 140
 120 PRINT "   ** LOWEST FIRST PLEASE **"
 130 GOTO 100
 140 IF A$="X" THEN 200
 150 INPUT "LOWER LIMIT FOR Y-AXIS ",Y1
 155 INPUT "UPPER LIMIT FOR Y-AXIS ",Y2
 160 IF Y1<Y2 THEN 200
 165 PRINT "    ** LOWEST FIRST PLEASE ** "
 170 GOTO 150
 200 LET RX=(X2-X1)/1279
 210 LET RY=(Y2-Y1)/1023
 215 GOSUB 1000
 219 REM  *** FED INK - CURSOR OFF **
 220 GCOL 0,1 : VDU 23;8202;0;0;0;
 225 FOR X=X1 TO X2 STEP RX*2
 300 LET Y=X*X*X*X-5*X*X-X+1
 305 IF Y>0 THEN PRINT TAB(0,1);"+";
 306 IF Y<0 THEN PRINT TAB(0,1);"-";
 307 IF Y=0 THEN PRINT TAB(0,1);"0";
 310 LET XC=(X-X1)/RX
 315 LET YC=(Y-Y1)/RY
 317 IF F=0 THEN FP=1 ELSE FP=0
 320 IF XC<0 OR XC>1279 OR YC<0 OR YC>1023 THEN LET F=0 ELSE LET F=1
 321 IF X=X1 THEN MOVE XC,YC
 322 IF F=1 AND FP=1 THEN MOVE XC,YC: PLOT 5,XC,YC
 325 IF FP=0 THEN PLOT 5,XC,YC
 330 NEXT X
 335 LET A=INKEY(5)
 336 IF A=-1 THEN 335
 340 PRINT TAB(1,30);
 350 INPUT "Do you want to redraw the graph ",A$
 355 IF LEFT$(A$,1)="Y" THEN 405
 360 IF LEFT$(A$,1)="N" THEN 900
 370 GOTO 350
 405 PRINT " Do you want to change either"
 410 PRINT " limits on x and y axes ?"
 420 PRINT "Enter <X> , <Y> , <B>OTH or N>EIHTER"
 425 INPUT "X,Y,B OR N ",A$
 430 IF A$="" THEN 425
 435 IF LEFT$(A$,1)="X" OR LEFT$(A$,1)="B" THEN 100
 440 IF LEFT$(A$,1)="Y" THEN 150
 445 IF LEFT$(A$,1)="N" THEN 215
 450 GOTO 420
 900 STOP
 998 REM
 999 REM
1000 CLS:GCOL 0,3
1003 IF Y1>0 OR Y2<0 THEN 1050
1005 MOVE 0,-Y1/RY
1010 PLOT 1,1279,0
1015 IF X2-X1>100 THEN 1040
1017 LET Y=-Y1/RY
1020 FOR I=(1/RX)*(ABS(X1)-(INT(ABS(X1)))) TO 1279 STEP 1/RX
1025 GCOL 0,0:PLOT 70,I,Y:GCOL 0,3
1030 NEXT I
1050 IF X1>0 OR X2<0 THEN 1100
1055 MOVE -X1/RX,0
1060 PLOT 1,0,1023
1062 IF Y2-Y1>80 THEN 1100
1065 LET X=-X1/RX
1070 FOR I=(1/RY)*(ABS(Y1)-(INT(ABS(Y1)))) TO 1023 STEP 1/RY
1075 GCOL 0,0:PLOT 70,X,I:GCOL 0,3
1080 NEXT I
1100 RETURN
```

```
1995 REM
1996 REM * SUBROUTINE TO PRINT *
1997 REM *  OUT INSTRUCTIONS   *
1998 REM
2000 CLS
2005 PRINT TAB(9,3);"I N S T R U C T I O N S"
2010 PRINT TAB(9,4);"------------------------"
2015 PRINT
2020 PRINT TAB(1,8);"To set a function :"
2022 PRINT TAB(1,7);"-------------------"
2025 PRINT TAB(10,11);"Re-write line 300"
2030 PRINT TAB(4,14);"IN BASIC - In the form : y = f(x)"
2035 PRINT TAB(7,16);"e.g.  300 LET Y = X*X*X-5*X"
2040 PRINT TAB(4,19);"Then RUN the program."
2050 PRINT TAB(5,31);
2055 INPUT "PRESS <ENTER> TO CONTINUE ...",A$
2060 CLS
2065 PRINT TAB(5,3);"Then enter the limits on the"
2070 PRINT TAB(5,5);"X and Y axes when requested."
2080 PRINT TAB(5,8);"Manipulating  these figures you can"
2090 PRINT TAB(5,10);"zoom in on any part of the graph."
2100 PRINT TAB(0,13);"The computer will then draw the function"
2105 PRINT TAB(0,15);"and wait until a key is pressed."
2110 PRINT TAB(1,18);"You can then opt to redraw the graph"
2112 PRINT TAB(1,20);"With different limits on the axes."
2120 PRINT TAB(5,23);"BUT NOW... If you want to put in "
2125 PRINT TAB(5,25);"another function; press <ESCAPE>"
2130 PRINT TAB(5,27);"Rewrite line 300 and RUN again."
2135 PRINT TAB(5,30);
2140 INPUT "Press <ENTER> to continue...",a$
2150 CLS
2155 PRINT TAB(5,3);"Do you want to see these "
2160 PRINT TAB(5,5);"INSTRUCTIONS again ?"
2165 PRINT TAB(5,7);"Please enter <Y>es or <N>o to "
2167 PRINT TAB(5,9);
2170 INPUT "input the limits on the axes...",A$
2180 PRINT : PRINT
2200
2400 RETURN
```

Measure for measure

A self-scaling graph utility for the Commodore 64
by **Peter Grsves**

For most bargraph plotting programs you need to know the maximum value of the data to be plotted before you start. The scale value can then be set so that all data values can be included on the graph. With *Autobar* the scale values are set automatically to suit the data, so numerical data from any source can be used without worrying whether the bar graph will go over the ends of the scale

The program is designed to be part of more elaborate data gathering programs. Ten input channels are available and the raw data is held in an array so that their exact values can be retrieved later (the bar graph is a low resolution device!)

When a new value enters an input channel it is added to the old value and the bar for that channel is plotted, unless the new value would take the bar over the edge of the screen. In this case, the scale value is recalculated and the whole graph is replotted. Additionally, the value of each bar (strictly, INT(value)) is printed at the end of each bar for instant comparison. The input data can be positive, negative or zero, negative or zero values are not plotted but they are printed out next to the Y-axis

The maximum value of any bar is set by the biggest number that can be printed at the end of a bar of maximum length without going over the edge of the screen. This is one of four digits and if any value exceeds 9999 then the graph is cleared and the values of all the channels are printed out. If the part of the program that prints the numbers is removed then the maximum value can be increased. To remove the values printed at the ends of the bars Remove Lines 1120, 1140, 1230-1280, 2000-2100 and change 1300 to 1300 For N=F+G to 1143+(M-1)

Program Notes

The program is structured into self contained subroutines that are called as required. For demonstration two methods of inputting data are included, selected by a menu.

Line No

1000-1070 Print menu, get selection, draw graph and insert usual X-axis values, jump to selected input module

1100-1310 The subroutine that plots the bars on the graph.

1120 If the array value being processed exceeds 9999 then *GOTO* the *End* routine (see notes above)

1130 If the array value being processed exceeds the current highest X-axis value then temporarily store the array subscript and call up the replotting routine

1140 The array value being processed as a string before being printed out at the end of the bar

1150-1160 If the array value is negative no bar is plotted but its value is printed out next to the Y-axis.

1170-1200 Using the current highest X-axis value, scale the array value and plot it by *Pokeing* inverse squares onto the correct line of the graph.

1210-1300 Print the array value after the bar by *Pokeing* each character along the same line as the bar and fill the rest of the line with spaces to erase any printing left over after a replot

1500-1570 Recalculate the X-axis value in steps of 30 until the X-axis value is higher than the array value being processed. Replot the whole graph with the revised value by calling up the plot routine for each array value in turn.

1600-1720 Convert the X-axis values to strings and *Poke* them, character by character downwards in the correct positions.

1800-1990 Initial setting up. Draw and label the graph axes, *Poke* the colour memory within the axes with alternate lines of red and yellow from the Y-axis to the screen edge. Set up the initial X-axis value and the array. Print the X-axis values

2000-2100 The *End* routine. Clears the screen and prints out the full values of all the array variables if any array value exceeds 9999 (see notes above)

2200-2380 Input Module 1 – manual input. The number of the bar to be changed is selected followed by the value to be added to it. The appropriate array value is updated and the bar is replotted. The process is repeated.

2400-2490 The data is read from the data blocks in Lines 2480 and 2490. The data is held as pairs of numbers in the form. Bar Number, Data. Each pair is read in turn, the array is updated and the appropriate bar is plotted. When all the data has been read the data pointer is *Restored* and the blocks are read again for as long as required

```
10 REM *******************
11 REM *                 *
12 REM *  AUTO BARGRAPH  *
13 REM *                 *
14 REM *       BY        *
15 REM *                 *
16 REM *  PETER GRAVES   *
17 REM *                 *
18 REM *******************
19 REM
20 REM
1000 REM**********DEMO****************
1010 PRINT "DEMONSTRATION"
1020 PRINT "1. MANUAL INPUT
1030 PRINT "2. INPUT FROM DATA BLOCK"
1040 INPUT "1 OR 2 " C%
1050 IF C%<1 OR C%>2 THEN 1000
1060 GOSUB 1800 GOSUB 1600 REM DRAW THE      GRAPH. PUT IN X-AXIS VALUES
1070 ON C% GOTO 2200,2400 REM GOTO           SELECTED INPUT MODULE
1100 REM******************************
1110 REM PLOT GRAPH
1120 IF A(M)>9999 THEN 2000
1130 IF A(M)>X THEN D=M GOSUB 1500 M=D
1140 E$=STR$(INT(A(M)))
1150 F=1110+(M-1)*40
1160 IF A(M)<0 THEN POKE F 45 F=F+1 G=0 GOTO 1210
1170 G=INT(A(M)*30/X)
1180 FOR N=F TO F+G-1
1190 POKE N,160
1200 NEXT
1210 REM PRINT VALUE AFTER BAR
1220 H=1
1230 FOR N=F+G TO F+G+LEN(E$)-2
1240 H=H+1
1250 POKE N,VAL(MID$(E$ H 1))+48
1260 NEXT
1270 REM FILL REST OF LINE WITH SPACES
1280 FOR N=F+G+LEN(E$)-1 TO 1143+(M-1)*40
1290 POKE N,32
1300 NEXT
1310 RETURN
1500 REM******************************
1510 REM REPLOTS GRAPHS FOR NEW X AXIS      VALUE
1520 X=X+30 IF A(M)>X THEN 1520
1530 GOSUB 1600
1540 FOR M=1 TO 10
1550 GOSUB 1100
1560 NEXT
```

```
1570 RETURN
1600 REM######################################
1610 REM PRINT X AXIS VALUE RUNNING                    DOWNWARDS
1620 X$=STR$(X) Y$=STR$(INT(X*2/3)) Z$=STR$(INT(X/3))
1630 FOR N=2 TO LEN(X$)
1640 POKE 1619+(N-2)*40,VAL(MID$(X$ N 1))+48 POKE 55891+(N-2)*40 1
1650 NEXT
1660 FOR N=2 TO LEN(Y$)
1670 POKE 1689+(N-2)*40,VAL(MID$(Y$ N 1))+48 POKE 55881+(N-2)*40.1
1680 NEXT
1690 FOR N=2 TO LEN(Z$)
1700 POKE 1599+(N-2)*40,VAL(MID$(Z$ N,1))+48 POKE 55871+(N-2)*40.1
1710 NEXT
1720 RETURN
1800 REM INITIAL SETTING UP##########
1810 POKE 53280 0 POKE 53281 0 POKE 646,1
1820 PRINT "J"
1830 FOR N=0 TO 6 STEP 2
1840 PRINT "AR(",CHR$(49+N), )# "
1850 PRINT "AR( ,CHR$(50+N)   )# "
1860 NEXT
1870 PRINT "AR(9)# "
1880 PRINT  AR(10)# "
1890 PRINT TAB(5) "
1900 PRINT PRINT TAB(5) "0"
1910 REM SET UP COLOUR MEMORY IN GRAPH              AREA
1920 FOR N=1109 TO 1503 STEP 80
1930 FOR M=1 TO 34
1940 POKE 54272+M+N,2 POKE 54312+M+N,7
1950 NEXT M
1960 NEXT N
1970 REM SET UP INITIAL VALUES
1980 X=30 DIM A(10) GOSUB 1500
1990 RETURN
2000 REM################################
2010 REM##ONE INPUT >9999  SO END#####
2020 PRINT"ONE INPUT GREATER THAN 9999
2040 PRINT"CURRENT DATA VALUES ARE "
2050 PRINT PRINT
2060 PRINT "A(M)     VALUE"
2070 FOR M=1 TO 10
2080 PRINT "" M,"     ",A(M)
2090 NEXT
2100 END
```

```
2200 REM###############################
2210 REM INPUT MODULE 1, MANUAL INPUT
2220 PRINT "MANUAL INPUT"
2230 FOR N=1 TO 20
2240 PRINT
2250 NEXT
2260 INPUT "BAR NUMBER (1-10)" J%
2270 IF J%<1 OR J%>10 THEN 2220
2290 FOR N=1 TO 12
2300 PRINT "",
2310 NEXT
2320 INPUT  "VALUE",K
2330 M=J%
2340 A(M)=A(M)+K
2350 GOSUB 1100
2360 GOTO 2220
2400 REM###############################
2410 REM INPUT MODULE 2, INPUT FROM DATA            BLOCK
2420 PRINT " INPUT FROM DATA BLOCK"
2430 FOR I=1 TO 20
2440 READ M & A(M)=A(M)+8
2450 GOSUB 1100
2460 NEXT
2470 RESTORE GOTO 2450
2480 DATA 1 1,2,2,3,3 4,4,5,5,6,6,7,7,8 8,9,9,10,10
2490 DATA 1,1,2,2,3,3,4,4,5,5,6,6 7,7,8,8,9,9 10 10
```

Making plans . . .

No excuse for missed birthdays now with the Mini-Planner from ***A Beedle***

This programme prints a whole year calendar aligned against the days of the week. The dates are held in an array (*cal*). The zero element of the array holds the element number of the first day of the month. A parallel string array (*inf$*) consists of elements which are in the form, "=PBPeggy's Birthday".

The maximum length of the string is 17 characters. The first character of the string is a key signifying, say, "Rent due" and which occurs at regular intervals. The next 2 characters are the first two capitals in the remainder of the string, repeated. The programme prints these three characters on the whole-year display. There is the option to print any three months of the year only. In this case the whole string apart from the two initials is printed.

A data file has first to be set up. Use Lines 5000 onwards. A sample file is shown in *List 3* to be printed next week. The data is month, day, information. Write the file and save it in *mdv1* as "???-date" (??? can be anything and any length).

Lines 110 to 150 check to see if any such date file has already been merged, and if so it is deleted in Line 150. The required file is then merged in Line 280. Incidentally this line will not work if it is in a Procedure or Gosub.

Lines 300 to 360 give the choice of setting up a new calendar or loading one already saved. On the initial run you must use the New Year option and can later save this array.

We continue next week with the remainder of the listing and program notes.

```
100 RESTORE
110 REPeat temp
120 IF EOF: EXIT temp
130 READ check$
140 END REPeat temp
150 IF check$   31": DLINE 5000 TO : CONTINUE
160   CLS : MODE 4: CSIZE 2,0
170 DATA  Mon ","Tues", Wed  , Thur , Fri  , Sat  , Sun
180 DATA  Jan",31,"Feb ,28, Mar ,31,"Apr ,30,"May ,31, Jun  3[illegible] "Jul","[illegible],
 Aug ,31, Sep ,30, Oct ,31, Nov ,30, Dec",31
190 DIM dy$(6,4),month$(12,3),mnth(12),cal(1[illegible],40),inf$(1[illegible] 40,[illegible])
200 check$ = ""
210 RESTORE
220 FOR i = 0 TO 6: READ dy$(i)
230 FOR i = 1 TO 12: READ month$(i),mnth(i)
240  CLS : AT 3,0: INPUT  What Year do you want ? "[illegible]year$
250 INPUT  Initials of data reference  ;init$
260  LET file_name$ = mdv1_ ? year$ !      & init$ &  _planner"
270  LET data$ = mdv1_  ! init$ !  _data
280 MERGE data$
290 PAPER 2 : CLS
300 AT 3,0: PRINT          N  to start New Year
310 PRINT \"      L  to load data
320 REPeat loop
330 IF KEYROW(7) && 64: new_year
340 IF KEYROW(4) && 1: load_data
350 END REPeat loop
360 CLS: AT 10,3: PRINT "LOADING DATA"
370 menu
380 STOP
390 REMark
400 DEFine PROCedure menu
410 CLS
420 PRINT \"      A  to alter or add to chart"
430 PRINT \"      S  to save chart"
440 PRINT \"      D  to display"
450 PRINT \"      M  for 4-weekly Payments"
460 PRINT \"      C  for Monthly Payments"
470 PRINT \"      ESC  to finish"
480 REPeat loop
490 IF KEYROW(4) && 16: a_data
500 IF KEYROW(3) && 8: save_data
510 IF KEYROW(4) && 64: display
520 IF KEYROW(2) && 8:cal_month
```

```
531 IF KEYROW(2) && 64:monthly
540 IF KEYROW (1) && 8: CLS: AT 1 , 4: PRINT "FINISHED": STOP
550 END REPeat loop
560 END DEFine menu
570 REMark   -- .
580 DEFine PROCedure new year
590  CLS
600 AT 10 ,4: PRINT  Loading arrays
610   FOR m   1 TO 12
620  FOR day   1 TO 38  inf$(m,day) = "000"
630  END FOR m
640 CLS
650 INPUT \\"What is day of 1st of January "(eg Mon)" ;first$
660  first$ = first$(1 TO 2) :IF CODE (first$)   96: first$ 1   = uf$: CODE(first
$) - "2!
670 INPUT \ "What is year ?"; year
680 INPUT :\ "What day is Good Friday (eg 5) ";gf
690 INPUT \  Which Month is Good Friday (eg 4)";m gf
700 IF (year) MOD 4 = 0:month(2) = 29
710 CLS: AT 10,4: PRINT "Calculating Bank Holidays"
720 FOR i = 0 TO 6
730 IF first$ = dy$(i,1 TO 2): first = i: EXIT i
740 END FOR i
750 first$ = dy$(i)
760 FOR m = 1 TO 12
770 start_month
780 END FOR m
790 st dec = cal(12,0)
800 st_jan = cal(1,0)
810 st_may = cal(5,0)
820 st aug = cal(8,0)
830 FOR day = 1 TO 38
840 FOR m = 1 TO 12
850 IF day MOD 7 = 0 : inf$(m,day) =  111
860 END FOR m
870 END FOR day
880 c_day = st_dec + 24
890 IF st_jan MOD 7  / 0
900 inf$(1,st_jan) =  "222New Year s Day
910 ELSE
920 inf$(1,st_jan + 1) =  "222New Year s Day"
930 END IF
940 inf$(12,c day) =   222Christmas Day": inf$(12 c day + 1)= "222Boxing Day
950 st_c = c_day MOD 7
960   IF st_c = 0:inf$(12,c_day,1) = 1:inf$ 12,c_day + 2) =  222Bank Holiday
970   IF st_c = 6: inf$(12,c_day + 1,1) = 1:inf$(12,c_day + 2) = 222Bank Holiday
"
980 FOR day = st_may TO st_may + 6: IF day MOD 7 = 1:inf$(5,day) ="222Bank Holid
ay"
990 FOR day = st aug +24 TO st aug + 31: IF day MOD 7 = 1:inf$(8,day) = "222Bank
 Holiday"
1000 FOR day = st may +24 TO st_may + 31: IF day MOD 7 = 1:inf$(5,day) =  222Ban
k Holiday"
1010 FOR day = 1 TO 38: IF  cal(m_gf,day)=gf:inf$(m_gf,day)= "222Good Friday"
1020 gf = gf + 3: IF gf / 31: gf = gf - 31: m_gf = m_gf + 1
1030 FOR day = 1 TO 38: IF cal(m_gf,day)=gf:inf$(m_gf,day)= "222Easter Monday"
1040 sort_data
1050 CLS
1060 END DEFine new year
1070 REMark      .
1080 DEFine PROCedure display
1090 CLS: AT 3,0
1100  OPEN #4,scr_510x30a0x0  INK #4,7: PAPER #4,0: CSIZE 0,0: OPEN #3,scr_500x2
.6a  30:INK #3,7:PAPER #3,0
1110 PAPER 0: CLS
1120 AT 3,0 : PRINT      Y  to print year "\       M  to print a Month"
1130 REPeat loop1
1140  IF KEYROW(5) && 64 PAUSE 20:yr = 1: p_year
1150 IF KEYROW(2) && 64 :PAUSE 20: p_month
1160 IF KEYROW(1) && 8: CLS: CLS #3  menu
1170 END REPeat loop1
1180 CLS
1190 END DEFine
1240 REMark .     .
1250 DEFine PROCedure p_year
1260 CLS #0: CLS #3:INK #4,2 CLS #4:PRINT #4, "                          MINI-PLA
NNER   , year
1310 INK #4,4: PRINT #4 "          ;:FOR m = 1 TO 12 : PRINT #4,month$(m);    ";
1320 PRINT #4
1330 FOR day = 1 TO 38
1340  t 2
1350 p dy$((day -1) MOD 7),: p " "
1360  FOR m = 1 TO 12
1370 IF LEN(cal(m,day)) = 1: t 1
1380 IF cal(m,day)    "0"
1390  p  cal(m,day);
1400  ELSE
1410  t 1
1420 END IF
1430 FOR i   1 TO 3
1440  state   CODE(inf$(m,day,i))
1450   SELect ON state
1460  = 48:p "
1470  = 49
1510   PAPER #3,3,7,3: t 1: PAPER #3,0
1530  = 50
1570   PAPER #3,4,7,3: t 1: PAPER #3,0
1590  = REMAINDER
1610    INK #3,4
1620    p inf$(m,day,i)
1630     INK #3,7
1650  END SElect
1660 END FOR i
1670 p "!
1680 END FOR m
1690 nl
1700 END FOR day
1720 nl
1730 t 20:p "KEY":nl
1740 key1
1750 key2
1760 PRINT #3: PRINT #3
1780  p "Any  Key to continue
1790 PAUSE 10
1800 c$ = INKEY$(-1)
1810 CLS #4:CLOSE #4:CLS #3
1820 CLS:CLOSE #3
1830 menu
1840 END DEFine
1850 REMark        ......
1860 DEFine PROCedure p_month
1870  CLS #3: CLS #4
1880 AT 5,0: INPUT "Which Month " ";mt
1890 IF mt    10: mt    10
1910 CLS #0: CLS #3:INK #4,2: CLS #4:
PRINT #4,FILL$(" ",36);year
1920   REPeat loopm
1930 INK #4,4:PRINT #4,"          ";
FOR m = mt TO mt + 2 :PRINT #4,
; month$(m);           ";
1970 FOR day = 1 TO 38
1980   p dy$((day -1) MOD 7)
1990  t 1
2010 FOR m = mt TO mt + 2
2020 IF cal(m,day) = 0: t 1
2030 IF cal(m,day ) < 10: t 1
2040 IF cal(m,day) <> 0 : p cal(m,day)
2050 t 1
2060 FOR i = 1 TO 3
2070 state = CODE(inf$(m,day,i))
2080 SELect ON state
2090 = 48: t 1
2100 = 49
2140 PAPER #3,7,2,3:t 1: PAPER #3,0
2160 = 50
2200 PAPER #3,7,4,3:t 1: PAPER #3,0
2220 = 65 TO 90
2230 t 1
2240 = REMAINDER
2250  INK #3,2
2260 p inf$(m,day,1)
2270  INK #3,7
2280 END SElect
2290 END FOR i
2300 t 1
2310 p inf$(m,day,4 TO ): t 17
LEN(inf$(m,day,4 TO)): p    "
2320 END FOR m
2330 nl
2340 END FOR day
2360 t 36: p "KEY":nl:key2
2370 nl: p    N  for other months     or
ESC to leave
2400 REPeat lp
2410 IF KEYROW(2) = 64
2420 PAUSE 20
2430  p_month
2440 END IF
2450 IF KEYROW(1) = 8
2460 CLS #3: CLS #4: CLOSE #4
2470 CLS: CLOSE #3:  menu
2480 END IF
2490 END REPeat lp
2500 END REPeat loopm
2510 PRINT
2520 END DEFine
```

A Fair Deal For Our Advertisers

No guesses, no wishful thinking – the circulation of this magazine is audited to the strict professional standards administered by the Audit Bureau of Circulations



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Open Forum

We are always actively seeking programs for publication – either for Open Forum, the machine pages or Star Game. When sending in a program for consideration, a clear program listing should be sent together with, wherever possible, a saved copy on cassette. Documentation – usually not more than 1000 words – should start with a general description of the program, what it does, and then some detail of how the program itself is constructed. We pay very competitive rates, according to the length and nature of the program and the quality of the accompanying documentation.

Bounce

on QL

The program *Bounce* is written for the QL in the form of a procedure that can be called from within your own program. It uses the QL's cursor command to print text in hi-res.

The program produces an attractive display that could be used at the start of your programs.

Lines 15 to 19 drop the letter from the top of the screen and Lines 21 to 29 bounce the letter up and down.

You may enter any text you like in Line 7 and also a special *juggle* feature can be added by changing Line 9.

```
1 DEFine PROCedure bounce
2 REMark BY RICHARD SHERGOLD , SELSEY , WEST SUSSEX.
3 PAPER 0
4 INK 7
5 CLS
6 CLS£0
7 A$="BOUNCING LETTERS"
REMark ENTER YOUR OWN TITLE
8 JUGGLE =0  REMark ENTER YOUR OWN VALUE
9 CSIZE 3,1
10 REMark DROP LETTER
11 FOR N = 1 TO 16
12 Z$=A$(N)
13 IF Z$=" " THEN NEXT N
14 INK (2+(N-1) MOD 4)
15 FOR A = 0 TO 45 +RND(-JUGGLE
TO JUGGLE)STEP 2
16 BEEP 200,30-A
17 CURSOR 16*N+50,A
18 PRINT Z$
19 NEXT A
20 REMark BOUNCE LETTER
21 FOR T = 11 TO 1 STEP -2
22 FOR y= 1 TO T STEP 2
23 CURSOR 16*N+50,A-y PRINT Z$
24 PAUSE T/15 NEXT y
25 FOR y= T TO 1 STEP -2
26 CURSOR 16*N+50,A-y PRINT Z$
27 PAUSE T/15 NEXT y
28 BEEP 400.T
29 END FOR T
30 END FOR N
31 PAUSE 100
32 END DEFine bounce
```

Bounce
by R Shergold

Arcade Avenue

Getting the edge

Here's a letter from Steven Tilley of Cambridge who must be the first to finish *Avalon* by Hewson Consultants since he did it back on the 1st November. He offers this challenge to anyone else playing the game. "First what is the minimum number of different spells you need to complete the adventure? Second what is the smallest number of different rooms you can pass through to finish. I can do it in 94 rooms which takes 45 minutes playing time."

Another first comes from John Martin of Upminster who claims to be the first Dragon owner to finish *Manic Miner*. He gives us some tantalising hints about some Extra screens known as the Dragon Owners Bonus and The End but refuses to go into details – sorry John, but I don't believe there is any prize offered with the new versions of this game. After all the mess about the *Jet Set Willy* prize I don't know whether Software Projects will go in for that sort of unnecessary thing again.

I've also come across the first person to have any sort of clue to what is going on with the game *Psytraxx* by The Edge. Over to David Sparkes of Croxley Green.

"This excellent game has to be the biggest arcade adventure of all time – I'm running out of paper trying to map the 1000+ rooms. My highest percentage is 43% but I'm working on it!

"There seems to four separate circuit boards placed one above the other and assuming they are all the same size then each has 250 rooms laid out in a square. The bottom board is coloured white, the second yellow, the third cyan and the fourth green. If you bump into a green 'OR' gate it will take you to the green board etc. Each board is inhabitated by different components that get fiercer and more diverse the higher you get.

"The maximum number of program cards you can hold is four. This means the player has to use strategy as there are six colours of force field to deactivate. Once removed the fields will not appear again.

"The main objective seems to be to get the 'Master key cards' to the Emperor Robot's CPU to destroy it. I can't find the CPU yet but the cards have C, P and U on them. They appear in different places with each game so locating them is tricky to say the least."

Let's finish this week with some short letters – first for Leif Findlay's mum of Mill of Marcus in Scotland – yes 99% is the maximum on *Atic Atac*. Lief wants more *Pokes* so how about this routine from Gary Howland of Boston for *Scubadive* on Spectrum. "Once loaded type L or S to load/save the scores then press shift-break, *Poke* 58711,255 *Poke* 58779,255 then *Goto* 2 for endless lives."

Tony Kendle

The Arcade Corner is a new section for anyone who enjoys playing arcade games. If you have any comments from playing tips on difficult games or programs you'd particularly like to praise (or blame!) then write to Tony Kendle, Arcade Avenue, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 3LD

Open Forum

Pollen

on Vic20

This short program runs in 2K on the unexpanded Vic20. As Frederick, the allergy sufferer, you must struggle through the dense (it's a bit thick!) pollen jungle to reach the capsule of antihystamine solution located at the bottom of the screen.

Luckily, he has three anti-pollen-plasma-bolts which he can use to vaporise the surrounding pollen. If Frederick runs into some pollen, his adrenalin level rises and he dies of a runny nose.

Obviously, the quicker Frederick can get to the AH solution, the happier he will be.

Program Notes

Lines	1-80	Instructions
Lines	100-140	Set up screen
Lines	150-220	MOVE!
Lines	250-300	Runny nose job ???
Line	550	Yes
Lines	600	No (Good)

```
1 POKE650,255 POKE36076,15 D=36876 C=30720 R=
 241
10 PRINT"J" S=100000
20 V=0 M=0
30 E=INT(22*RND(1)+7702)
40 H=INT(22*RND(1)+8164)
45 POKE36879,27
50 PRINT"%          *MAZE*
60 PRINT"L-DOWN              P-UP"
70 PRINT"Z-LEFT            X-RIGHT"
80 PRINT"%  SPACE-PLASMA-BOLTS"
90 FORU=0TO1000 NEXTU PRINT"J"
100 POKE36879 59
110 FORA=1TO250 POKED ,INT(RND(1)*255) POKED,0
120 B=INT(462*RND(1)+7724)
130 POKEB 81 POKEB+C,4
140 NEXTA
150 POKEH,94 POKEH+C,0 GETA$
160 POKEE,90 POKEE+C,2
170 IFA$="L"THENG=22 POKED,R POKED,0 GOTO250
180 IFA$="P"THENG=-22 POKED R POKED,0 GOTO250
190 IFA$="Z"THENG=-1 POKED,R POKED,0 GOTO250
200 IFA$="X"THENG=1 POKED,R POKED,0 GOTO250
210 IFA$=" "THENG=1 GOSUB1000
220 GOTO150
250 M=M+1
260 POKEE,32 POKEE+C,2 E=E+G
270 IFPEEK(E)=81THENPOKE36879,43 POKE 36877,R
 FORY=1TO100 NEXTY POKE36877,0 GOTO 550
280 POKEE,90
290 IFE=HTHEN600
300 GOTO150
550 POKE36879,27 PRINT"JYOU HIT A POLLEN GRAIN
 AND HAVE DIED OF A         RUNNY NOSE!"
560 PRINT"ANOTHER GAME (Y/Y)?"
565 GETG$
570 IFG$="Y"THEN580
575 POKE36879 INT(RND(1)*255) POKED,INT(RND(1)*
 255) POKED,0 GOTO565
580 PRINT"J"
590 GOTO20
600 POKE36879,27 PRINT"JWELL DONE YOU DID IT!"
610 PRINT"YOU DID IT IN"M"MOVES
620 IFM<STHENS=M
630 PRINT"LEAST MOVES="S
640 GOTO560
1000 IFV<3THEN1020
1010 GOTO150
1020 POKEE+1,32 POKEE-1,32
1030 POKEE+22,32 POKEE-22,32 V=V+1 M=M+10
1040 RETURN
```

Pollen
by H Dunn

Baud Walk

On approval

One of the most interesting aspects of the sudden decrease in the price of modems during the last six months has been the appearance of a device that was hitherto only to be found in the domain of the professional networker – the multi-rate modem.

The first modem which acheived public notoriety, was Miracle Technology's Minor Miracle modem which offers virtually every baud rate conceivable packed into its tiny little box. Although initially unapproved by BT, it has since been given the coveted green sticker of approval, and several thousand are now nestling cosily by the side of many networker's computers.

Many networks charge extra for the facility of accessing their databases at speeds in excess of the almost standard 300 baud, so most people tend to use such networks at this speed wherever possible, in order to keep their bills down. What many do not realise is that, whilst most networks levy a surcharge of between 25 and 50 per cent for use of 1200 baud access, the data so sent is "pumped through" four times as quickly!

To put it another way: The time you spend on-line, and, therefore, your timecharge, not to mention your phone bill, is considerably reduced.

Let's take The Source, (a well known US Database), as an example.

For a typical 30 minute, cheap rate call via PSS, the charge for 300 baud access would be as follows . . .

	£
Telephone Charges	0.20
PSS Charges (Time)	3.00
PSS Charges (Data/Est)	1.75
Source Connect Fees	3.00
	7.85

Yet the same call, if made at 1200 baud, would probably result in an approximate 75% reduction in on-line time, as follows

	£
Telephone Charges	0.05
PSS Charges (Time)	0.75
PSS Charges (Data/Est)	1.75
Source Connect Fees	1.00
	3.55

It's fairly obvious that there is a considerable saving to be had, despite the surcharges levied by the Source Telecomputing Corporation for high speeds access.

Most single speed modems cost around £70 to £80. Now, for an extra £50 or so, it is possible to get one of the multispeed/rate generation of modems. At the time of writing, Unicom have announced the imminent launch of a similar device for around the £80 mark, although whether this will reflect future prices, remains to be seen. Certainly, the price curve seems on a definite downward trend.

One world of caution though is that unapproved modems, if connected to the public telephone network (they'd make an expensive paperweight otherwise!), can at worst, mean possible phone disconnection.

For some networkers I know, that would be unthinkable so it could pay to look for the little green approval sticker.

Robin Wilkinson

Baud Walk is a new weekly column with news on networking, databases, reviews of modems and informs and points of contact for information.
Any readers with experience of networking are asked to send their experiences or news of services to Robin Wilkinson, Baud Walk *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP. He can also be contacted on Prestel mailbox 019998787.

Guesser

on Dragon

In this game the computer selects an integer from 0 to 9. You input what you think is the integer, and if you're correct, you're given a score, dependant on the time taken. If you're wrong, the computer selects another number and you must try again — beware of the time limit

Program Notes

Variables

A = Chosen Integer
D = Total Score
G = Number of successful games
T = Points
A$ = Guessed integer

Line No	
50-100	Set variables
130-270	Select integer/input guess
280-330	Time up loop
340-440	Display for success

```
10 REM******************
20 REM*TEST YOUR LUCK*
30 REM* BY A R WALLIS*
40 REM******************
50 D=0 G=0
60 CLS4
70 PRINT"TEST YOUR LUCK"
80 TIMER=0 P=32
90 X=0
100 T=75-(TIMER/10)
130 PRINT@P," ";
140 PRINT@22," ";
150 P=P+1
160 IF T<1 THEN 280 REM
TIME UP
170 PRINT@ P,"*",
180 PRINT@ 22,USING"###"
,T,
190 X=X+1
200 SOUND X,2
210 FOR N=1 TO 75 NEXT N
220 A=RND(10)-1
230 A$=INKEY$
240 IF A$=""THEN 230
250 IF ASC(A$)<48 OR ASC
(A$)>57 THEN 220
260 IF VAL(A$)=A THEN 34
0
270 GOTO 100
280 PRINT"TIME UP"
290 SOUND 40,3
300 FOR N=1 TO 500 NEXT
N
310 CLS
320 FOR N=1 TO 500 NEXT
N
330 GOTO 280
340 CLS6
350 PRINT@ 64,"WELL DONE
"
360 SOUND 200,15
370 PRINT USING"YOUR SCO
RE IS ## ##",T
380 G=G+1 D=D+T
400 PRINT USING"YOUR AVE
RAGE SCORE IS ## ##",D/G
410 PRINT"PRESS ANY KEY
FOR ANOTHER GAME"
420 B$=INKEY$ IF B$=""TH
EN 420
440 GOTO 60
```

Guesser
by A Wallis

The Music Box

Just one note

A couple of weeks ago, I wrote briefly about digital sound samplers (DSS) using the Apple IIe and Commodore 64. Those of you who want to try your hand at this most exciting technique but don't have the readies for a DSS or a Microsound system might be interested in one of the Spectrum-based packages that are around.

I've received information on two DSS systems – one from Datel and one from Ricoll – for the Spectrum and, though I can't guarantee the quality of these products since I'm still investigating their potential, they both seem well worth further inquiries

The point of DSS – as those of you who are regular readers of this column will know – is to digitally encode and store a specific sound which can then be modified and replayed. In this way, one actual sound gives us the 'template' by which to produce a whole range of digital sounds of differing pitches, tempos or durations

Professional DSS systems are extraordinarily expensive because high-quality audio work demands the highest mechanical and electronic standards of equipment Inevitably, cheap systems – whatever the claims of the manufacturers – will not meet professional standards. The question is, are they usable at all?

Datel Electronics of Unit 8, Fenton Industrial Estate, Dewsbury Road, Fenton, Stoke-on-Trent, produces a plug-in DSS device for the Spectrum at £49 95 The Datel DSS is an absolutely basic 8-bit digital-to-analogue and analogue-to-digital converter in a box, together with some essential software

With this kind of system, the hardware is minimal and software is the most important thing I'll be reporting on my results with the software soon. You can phone Datel on 0782-273815.

The Action Replay from Ricoll Electronics, 48 Southport Road, Ormskirk, Lancashire L39 1QR, is priced at £177 75 and again consists of a plug in unit and essential software

Ricoll point out that an amplifier and a microphone will both be needed to get anything out of their sampler As with the Datel DSS, Ricoll's uses the Spectrum keyboard as a music keyboard to play-back the sampled sound. However, a voltage control facility allows you to plug to synthesizers so that sampled sounds become available to them. The specification looks reasonable for a sampler, and it's encouraging to note that Ricoll make no outlandish claims for their system Phone them for further details on 0695-78101/2

Gary Herman

The Music Box is a new weekly column with news, reviews and readers comments on all aspects of micros and music.

Any readers with experience of computer music making or companies with new product news are invited to write to: drop a line explaining what they're doing to Gary Herman, The Music Box, 12-13 Little Newport Street, London WC2R 3LD

Tony Bridge's Adventure Corner



Get out of jail free

I begin this week with a letter from Germany from Hans Zagorski. "Dear Tony, as German grammar is a bit difficult, adventure programs are not very popular in Germany and we don't have any 'Adventure Help' in our computer magazines So, I would be pleased to find other computer enthusiasts in England who own a Commodore 64, like myself Is it possible to mail order *A Guide to Playing The Hobbit*? Also, what use is the Broken Timber in *Zork I* and in *Zork II*, how do I move the Menhir?"

Thanks for the letter, Hans. The address of Melbourne House, who publish the book you mention, is 39 Milton Trading Estate, Abingdon, Oxon. OX14 4TD I'm sure that there are a lot of Commodore users who would be only too glad to write to you with hints on the *Zork Trilogy* (as far as the Broken Timber goes, I have never found a use for it either!) Write to Hans at Beethovenstrasse 3, 87 Wuerzburg, West Germany

From closer to home, Godstone in Surrey to be exact, Mr A Blount writes

His feeling is that adventures can so often become just a matter of reading the whole dictionary in order to find the right word Again I have to agree – but this is one of the facets of computer adventuring that will not, I feel, change in the near future

"For example," he says, "take *Urban Upstart* I am unable to find the right combination of words to get out of Jail" All that has to be done here is to type *Wait*. With hindsight, of course, this is pretty obvious (after all, what else do you have to do in Jail), but maybe it does not seem so obvious at the time! And this is why adventure helplines are so popular now, which brings us nicely to Mr Blount's final point: "I notice that some weeks you give an arrangement of letters and figures that can be used as clues – but how do I use them?"

Well, I always try to explain this system when I employ it, but to make it clear – you will find a list of words at the end of the Corner, just like the one for this week When giving out clues to adventures, I refer to these words by the number assigned to them in the list. In this way players who may not yet have reached this particular point in an adventure will not have their enjoyment spoilt You may notice, while reading other publications (why are you?) that many codes are used – I think this is probably the easiest and most practical (as well as being easier for me to work out!)

Now, enough of me giving Help – here are a couple of lady adventurers and Corner readers who are willing to impart some of their knowledge to others Karen Tyers says "Thanks for printing my letter in *Popular* and answering my questions. I was amazed at the response I got to my offer of help – the postman literally staggered up my drive with the letters! It's all good fun, and I've made a lot of new friends I have now finished *Lords of Time*, *Adventure Quest* and *Invincible Island*." Write to Karen at 19 Pams Way, West Ewell Surrey Pam Taylor also offers help in *Lords of Time*, as well as *Quest of Merravid* and *Planet of Death* But she also needs to know how to pass the pirate in *Ring of Power* Write to her at 167 Uplands Road West Moors Wimbourne, Dorset

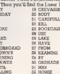
Before I get onto the first Help of 1985, let me just mention a couple of bugs that have been brought to my attention. The first is another in the long and honourable line of *Hobbit* bugs It's been noticed by Alan and Daphne Davis, who have picked up quite a few of these "It started with the well-known evaporation of the Black River, fast river and so on. We then typed "*Look*" and to our astonishment found ourselves in the Spider's Web But then – after telling us we were in the Web, the program proceeded to list all the objects present. And it churned out everything in the entire game! All the goblins (some dead), the dead Dragon, the wooden boat, some lunch, Gandalf, the wood all, al the keys – it went on and on! And here's the mystery We knew everything listed except one "some stone" Now we've never found "some stone" anywhere, nor have we found it since the bug manifested itself. Have you? Has anyone?"

On the subject of Hobbitbugs, Jonathan Bisset found that when he pressed 'CARR' on a friend's Commodore by mistake, he was greeted by a new creature called a CARRACK (maybe of the same breed as the ARAW!) – when his sister tried typing 'WEWEWEWEWEWE' on her Spectrum (well each to his or her own!), she was told that 'Thorin black hast the small curious key'

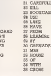
Melbourne House have not been sitting still when it comes to bugs *Sherlock* is a great program, and seems to contain its fair share of *Sherlockbugs* Roy Stilling, of Surbiton has found the first. "I was interviewing Daphne Strachan at about 7 30 pm on Monday when the program announced that it was out of memory and went into the Loading routine. I've heard that saying 'Hello' to Watson in the morning is to be avoided, and this is what I had done that morning I'm sure that I, and others, will find more Sherlockbugs, but despite this, I find *Sherlock* to be an excellent adventure and a worthy successor to *The Hobbit*. Can anyone tell me where the keys to Basil Phipps' and Tricia Fender's London homes are? I can reveal the whereabouts of a secret room, a fake drawer-bottom and how to open Basil's safe without getting shot To find the secret room, 21 28,23 To find the fake drawer-bottom, 21,35,12 For a few surprises, 21 28,31,10,20" If you want to give Roy some information, write to him at 15 Broomfield Road, Surbiton, Surrey

Kaye Newton is stuck in *The Stolen Lamp*, which is for the BBC and part of the Lothlorien Adventuremaster series "I have got the Key Box, and I know that it contains the Kay But I can't get at it whatever I do" This is part of another problem, which crops up earlier First of all, you must 28 30,34,19. Then 22,7,34 30,29,14,3 You Must have the Key Box with you when you do this, and you will find that the Key will survive

Finally, to a couple of old favourites, just in case anyone is a newcomer to adventures, having received a computer for Christmas *Planet of Death*, for the ZX81 and Spectrum was one of the very first British programs to sell in any quantity (vast quantities I should think!) Graham Scott of Newcastle can't get past the Force Field. I suppose that this is a problem that I will have to answer regularly every three months or so for the next several years, along with 'How do I get out of the Goblin's Dungeon?'! In particular, Graham is mystified at my mention of a Laser, when I last looked at this problem First, 24,9,27,32,15,35,19,1, 33,18 Then you'll find the Laser 15,6



1 WEST	19 CREVASSE
2 TUESDAY	20 BODY
3 PIN	21 CAREFULLY
4 THE	22 KILL
5 BEFORE	23 BOOKCASE
6 HUT	24 USE
7 GUARD	25 LAKE
8 WAIT	26 HAVE
9 FLOORBOARD	27 FROM
10 BROWN'S	28 EXAMINE
11 OPENING	29 BY
12 DRAWER	30 GRENADE
13 UNTIL	31 MRS
14 PULLING	32 HOUSE
15 TO	33 OF
16 YOU	34 WITH
17 SAFE	35 CROSS
18 IN	



This series of articles is designed for novice and experienced Adventurers alike Each week Tony Bridge will be looking at different Adventures and advising you on some of the problems and pitfalls you can expect to encounter So if you have an Adventure you want reviewed or if you are stuck in an Adventure you cannot progress any further write to Tony Bridge Adventure Corner *Popular Computing Weekly* 12 13 Little Newport Street, London WC2H 7LD.

Wrong listing

G. Robertson of Edinburgh writes

Q **I have been trying to run a program from The Explorer's Guide to the ZX Spectrum and ZX81, but to no avail. I have enclosed a listing of this program. When I sent the same copy of the program to Sinclair Research, they said that there was something wrong with the printer, which was not so.**

Their second answer was that I was holding the Enter key down too long.

I hope you can help me with this problem, as my guarantee is up next month, so if I know quickly I can return my machine.

A The program should be changed so as not to use *Inkey$* in Line 20. This will produce the expected result. The correct program is therefore

10 LET A$ = "" 20 INPUT Z$ 30 LET A$ = A$ + Z$ 50 PRINT A$ 60 PAUSE 25 70 IF Z$ < > "S" THEN GOTO 20 80 PRINT "THE END"

All the facts

Dominic Frost of Eccleshall, Staffs writes.

Q **Please can you help me? At the moment I have a Dragon 64 computer. I have used this to pass an 'O' level in computer studies and have found it generally very useful. Now that Dragon Data have gone bust I have decided to sell my computer and buy another.**

The two computers I am interested in are the Sinclair QL and the Amstrad CPC464. I have read all the facts about them but I cannot decide. Which should I buy?

A As you say that you have read all the literature on the two machines I will not repeat any of the technical analyses. In your position I would be quite tempted to go for the Amstrad – but that is very much an individual view.

My reason is because it is a complete system (ie, complete with monitor and cassette player). Whilst the Amstrad is not as fast a machine as the QL, the difference in speed is not likely to be noticeable to you.

I guess from your comments that you are not really interested in a long term system with massive expansion potential that will last you into the next decade (most computers only have a realistic life-span of five years in any case, before they are made obsolete by new entries into the market).

There is no question that the QL is the more technically innovative of the two machines – but it may have been launched a bit ahead of its time.

Company service

J Herridge of Villa des Roses, Paris, France, writes

Q **Further to your page in Vol 3 No 38, R. C. Jones BFPO 25 (A long search): I can inform you that I have a stock of software and MPF-II computers. I have a large number of software titles available at a cost of £7.50 each.**

I also sell peripherals for the MPF-II, such as joysticks, keyboards and interfaces. My company's name is *Micro Fair*

A It is always nice to be able to report a successful conclusion to a search for information on behalf of a reader. It is also nice when companies come forward and inform you of the services that they offer.

I am always glad to be able to pass this information on to readers.

Simple addition

R Neville of Laarbruch, BFPO 43 writes

Q **I have come to the conclusion both my Commodore 64 and VIC 20 cannot cope with simple addition or subtraction.**

Note the results from some simple subtractions is:

100.09	– 100	.0900000036
100.09	- 100.01	.0800000131
100.09	–	
100.02		.0700000003
100.09	–	
100.03		.0600000092
100.09	–	
100.04		.049999997

These errors can be corrected by rounding the results to two decimal places.
***Let* R1 = *Int*(R/0.01 = 0.5)* 0.01**
But, why the error in the first place.

A The error you have found is caused by the method used in the Commodore machines for the arithmetic instructions. As you know computers actually do their arithmetic. The code to actually achieve totally accurate fractional calculations depends upon the use of, so called, 'floating point' techniques. The Commodore machines do not actually use these techniques correctly, and hence the slight errors in all fractional calculations. It is interesting to note that a number of other machines, including the Spectrum and the BBC 'B', use the floating point methods correctly.

Talking Currah

S G Young of Glasgow writes

Q **I recently purchased a Currah Microspeech unit for my Spectrum. However, some programs do not work with the unit connected, and I feel that it cannot be beneficial to the expansion port to repeatedly remove and re-install the unit. Therefore some *Pokes* or a short routine to disable the unit whilst still having it connected would be highly desirable. Can you help?**

A Unfortunately, I do not know of any way of disabling the Microspeech unit. It is possible that one of the readers of PCW will know of a method, so I issue a plea . . can anyone stop the Currah from talking?

Which printer

Colin Johnson of Bishop Auckland, County Durham, writes

Q **I own a Spectrum – and would like advice on which printer I should buy. The printer should of course do listings, as well as screen dumps, and some word processing. It should also cheaply interface with the Spectrum. I have noticed two thermal transfer printers, the Epson P.40 and the Brother HR-5, the latter being a bit expensive. My price limit is £130 and I want to be able to use normal paper and possibly ZX keywords.**

A All thermal printers have to use heat sensitive paper, and therefore by definition cannot use normal paper.

The two printers you mention are both extremely good value for money devices, and I could recommend either of them to you. The Epson as you say is the cheaper of the two, but is none the worse for that. My personal preference, however, would be for the Brother, which at £169 is slightly above your limit.

Go on . . be a devil, spend a little more this year, it may be the only printer you will ever buy (Just in case any of you are wondering, I do not have any shares in Brother, only BT!)

Is there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem *Peek* it to Phil Rogers and every week he will *Poke* back as many answers as he can. The address is *Peek & Poke, PCW*, 12-13 Little Newport Street, London WC2H 7LD

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Valhalla on Spectrum. How do I get to Krank's Hall? Richard Taylor, 12 The Crescent, Wragby, Lincoln.

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The Castle on Spectrum. How do you get past the wall? Conald Mackay, 2 Stewart Drive, Stornoway, Isle of Lewis, Scotland

Life Search on NewBrain. I have lost the instruction leaflet and cannot get past Set Direction' Can anyone help? T Stevenson, Rookery Cottage, Vicarage Lane, Cadney Brigg S Humberside

Sphinx Adventure on BBC. I cannot go west the goblins. The crowd around me tear me limb from limb! Hamish Sander, 12 Strand Street, Padstow, Cornwall (Tel: Padstow 532698)

Hebble on Spectrum. How do I get out of the goblin's dungeon? Please help, I'm going crazy! Mark Fox, 59 Prince's Way, Stourport on Severn, Worcs

Tir Na Nog on Spectrum. Will someone please tell me what the four pieces of the Seal of Calum are? Colin Loftus, 38 Lewnorthy Lane, Northenden, Manchester M22

Sherlock on Spectrum. How do I find the Old Bill Road? Should I have had Mrs Jones/Tricia Fender arrested at this stage? Viv Chance, Barbarons Beach Hotel PO Box 626, Mahe, Seychelles (Postcards please!)

Twin Kingdom Valley in C64. How do I get the long staff to kill the dragon? S Blease, 2 Ashover Street, Gorse Hill, Stretford, Manchester (*Ed – please try using stamps that haven't been used before, next time!*)

Planet of Death on Spectrum. How do you get the rope hanging from the tree? How do you get the coin from the lake? Paul Lowth, 3 Pickmere Road, Hadforth, Wilmslow, Cheshire

Adventure on Vic20. How do I get the bear without dropping the honey? How do I heat the frozen door is so cold? K Morgan, 68 Richardson Street Ashington, Northumberland

Calisto Island on Dragon. How do I reach the island? I have the boat and the pump, but I cannot find the paddles which I need to row ashore. Where are they? Mark Carleton, 37 Dunenner Drive, Dundrum, Dublin Eire.

Mountains of Ket on Spectrum. How do I get to the mountains? Robert Fitt, 30 Wakelin Chase, Ingatestone, Essex

Snowball on BBC. I can't get off the bottom level Mark Collingwood, 140 Cherrydown Avenue, London E4

Eureka! on Spectrum. How do I greet Nero after winning the chariot race in Roman Italy? I offer help with Prehistoric, Arthurian, and Colditz adventure in return Andrew Hartley, 63 Main Road, Nether Kellet, Carnforth, Lancs

Forest at World's End on Amstrad Where do you find

the crystals of Vulcan? Is there anything down the well? Do you need to get into the volcano? Dominic Frost, 28 Badgers Croft, Eccleshall, Staffs (Tel Eccleshall 850298)

Tir Na Nog on Spectrum. Any help anyone can give me. I've wandered around the landscape and been jumped on by a monkey in pit boots P McLean, 146 Mortimer Road, South Shields, Tyne and Wear

Colditz on Spectrum. I'm stuck because I cannot find the sharp knife? What knife? I presume that is what the sharpening stone is for. Can anyone help? Michael Shaw, 36 Broom Mead, Bexleyheath, Kent

Quest for the Holy Grail on Spectrum. I cannot get past the knight that goes Ni! John Bevan, 2 Oakland Cottages, Red Brow Lane, Daresbury nr Warrington

Franklin's Tomb on Oric 1. What is the magic word that opens the treasure room gate? Unfortunately, this is not my only problem with this adventure. D Gomer, 86 Danygraig Street Graig, Pontypridd, Mid-Glamorgan.

Snowball on Commodore 64. How do I get the Bat-pak from the video viewer? L J Woodford, 16 Wellspring Terrace, Pontymister, Gwent

Urban Upstart on Commodore 64. How do I stop sinking on the building site? Where is the airport? Karl Marsh, 20 Cocknage Road, Dresden, Stoke-on-Trent

Madness and the Minotaur on Dragon How do I find mushroom, go to forest get lightening; get sword, and learn spells? Mark Gadsby 157 Pinewood Park, X Cove, Farnborough, Hants

Valhalla on Spectrum. After getting Drapnir I can make no progress towards Skornir. Barry Hoole, 5 Melville Road, Mill Park, Port Elizabeth, South Africa

Valhalla on Spectrum. I have not found Ofnir yet, and I have had the program for six months Help please? Stuart Jones, 20 Diane Drive, Rhyl, Clwyd Wales

Sherlock on Spectrum. How do I prove Basil Phipps did the double murder? How do I prove the Major innocent? Andrew Lang, 11 Penfold Drive, Great Billing, Northampton

Event	Dates	Venue	Admission	Organisers
Hi-Technology and Computers in Education Exhibition	Trade Jan 24 10.00am-1.00pm Educationalists Jan 24 1.00pm-6.00pm Jan 25 11.00am-6.00pm Public Jan 26 11.00am-6.00pm	Barbican London EC2	Free in advance from organisers	Computer Marketplace 01-930 1612
Apricot and Sirius Computer Show	Feb 6-1 10.00am-6.00pm	Kensington Town Hall London W8	Free in advance from organisers	Paradox 01-241 2354
ZX Microfair	Feb 8 10.00am-6.00pm	Alexandra Pavilion London N22	£1.25 adults 80p children (in advance)	Mike Johnston 01-800 9172
The LET '85 International Trade Show	Feb 17-18 10.00am-6.00pm Feb 19 10.00am-4.00pm	Olympia 2 London W6	Free in advance from organisers	Turret Wheatland 0923 777000

Readers' Chart No 7

1	(1)	Knight Lore *(Spectrum)*	**Ultimate**
2	(2)	Daley Thomson's Decathlon *(Spectrum/C64)*	**Ocean**
3	(3)	Ghostbusters *(Spectrum/C64)*	**Activision**
4	(4)	Underwurlde *(Spectrum/C64)*	**Ultimate**
5	(7)	Elite *(BBC/Electron)*	**Acornsoft**
6	(5)	Booty *(Spectrum/C64)*	**Firebird**
7	(6)	Beachhead *(C64)*	**US Gold**
8	(–)	Pyjamarama *(Spectrum/C64/Amstrad)*	**Mikro-Gen**
9	(–)	Manic Miner *(Spectrum/C64/Amstrad/Dragon/MSX)*	**Software Projects**
10	(–)	Staff of Karnath *(C64)*	**Ultimate**

Now voting on week 9

An apology: we have been unable to continue with our weekly chart prize fund. We have been advised that it contravenes the Lotteries and Amusements Act. However, we will of course continue to accept your votes and run the chart.

Each week Popular is compiling its own special software top ten chart – compiled by YOU.

All you have to do to vote is to fill in the form below with the names of your current three favourite software titles (or copy the form on to another sheet if you don't want to damage your magazine) and send it off as soon as possible to: Top 10, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 7PP.

Voting for Week 9 closes at 2pm on Wednesday January 23 1985. Entries received after that time will not be eligible for inclusion in that week's voting. The judges decision is final. Only one entry per individual per week will be allowed.

Name .... **My top 3: Voting Week 9**

Address .... 1..

.... 2..

.... 3..

New Releases

WATCHING

I think the Amstrad is going to make it, you know I say this without referance to the virtues of the machine (of which there are many) but use as evidence the fact that Amsoft, quite apart from the rasson able number of independent suppliers is steadily and regularly releasing software for the machine.

A couple more programs have just turned up, *Cantre Court* and *Detective*, the latter originally by Argus Press Software *Detective* caught my eye as being, apparently, a bit differant from the norm. "A game of deduction and tactics" it says on the box It is a game for several players and involves, here and there, players being honest enough to turn their face from the screen and not looking at certain information which is only provided to each player individually – this is usually asking for trouble

The idea is that each player assumes a different character and by searching a mansion must discover the identity of the murderer (who has done in the butler) The computer shows you a map of the house and throws the dice for you The answer is found by being in the correct location and entering the correct figures for weapon, murderer and motive

Actually, appearances being deceptive, this is really a souped-up version of *Mastermind* (rather than *Cluedo*) where you seek a series of colour patterns. As in that game for each guess you are told by the computer how many guesses are right and how many wrong – the competitive edge comes from trying to get to the right location and reasoning it out quickest The graphics are OK and the game works reasonably well

Don t be fooled into thinking it is some sort of adventure though

Program *Detectrve*
Price *£7 95*
Micro *Amstrad*
Sepplies *Amsoft*
Brentwood House
169 Kings Road
Brantwood
Essex CM14 4EF

HARD NOSED

Asterios software is, I suspect, one of those small software houses made up of enthusiasts rather than hard nosed executives (sorry if this is entirely incorrect, Asterios) Its first game (to my knowledge) is for the BBC and called *Nightmare Hall* Although basically a text adventure it has various elemants of Dungeons and Dragons to make the game that bit different.

Nightmare Hall is one of those Hammer Horror type places where all have met with death by unnatural means and evil forces. There are absolutely hoards of traps for the unwary as well as a maze or two for you to wander about in aimlessly

The BBC is not over supplied with adventures so this is a particularly welcome program. Well worth a look.

Program *Nightmare Hall*
Price *£5 95*
Micro *BBC*
Supplier *Asterios Software*
Kinross
Kendal Ave
Epping
Essex CM16 4PP

MORE ROM

For some people even BBC Basic is not perfect. Such aesthetes will much approve of the Basic extensions Rom availabe from Micro Power The Rom permanently adds a number of new commands both to Basic and to the general machine vocabulary of direct commands – the latter are mostly designed to warn you and get you out of tricky programming situations

Additions to Basic include *While*, *End While*, *Case*, *When*, *Otherwise*, *End .Case*, *Loop*, etc, etc – all adding to structured programming which is to programmers in Basic what BBC English is supposed to be to the rest of us

Direct commands include *Cont* which resumes a program around, *Dtob* and *Btob* to do binary/decimal conversions, *Status* for the amount of memory you have left and so on *Verify* for saved programs may be a particularly welcome addition.

A manual explains and illustrates the use of each new command and a small card briefly summarises the syntax for quick referance

Program *Basic Extensions*
Price *£13 95*
Micro *BBC*
Sepplier *Micropower*
Northwood House
North Street
Leeds
LS7 2AA

YOYO

The big problem with straight flight simulation programs is the fact that if they are any good they will be extremely difficult to master, but at the same time uneventful in the ordinary arcade terms Bids to mix programs in which simulation skills are prominent but which also have other features to retain your interest have sometimes been successful – the classic *Fighter Pilot* on the Spectrum is a case in point

F 15 Strike Eagle requires you not only to fly a jet fighter with (as an option) two joysticks (you can also use one joystick and keyboard) but engage in air-to-air battles, assaults on targets and defend yourself from a vast number of missiles The scenario is intended to be as realistic as possible, eg, different kinds of attack require different kinds of responses and manoeuvres in order to win.

There are two sections to mastering the game First, there is the by no means easy question of learning how to fly the plane properly – climbing, rolling, general aerodynamics and then there are a whole new range of skills to do with combat and defence to be learned – do you know what a high speed yoyo is?

Then there are the various different terrains – there are six missions available over areas like Libya, Egypt, and Iraq each needing different skills and posing different targets All in all enough to keep you going for months on end

The blurb describes the graphics as 'superb' and 'three dimensional' I think that's overstating the case a bit, the 3D is reasonable and the graphics above average but this is not a game I'd buy for those reasons Rather this looks like being one of the most wide ranging, detailed and exact simulations you can buy

As such it is really an excellent effort

Program *F 15 Strike Eagle*
Price *£14 95*
Micro *Commodore 64*
Supplier *US Gold*
Unit 10
The Parkway
Industrial Centre
Heneage Street
Birmingham B7 4LY

New Releases

NO CATCH

Tim Love's Cricket, from Peaksoft for the Commodore 64, is a cross between a simulation and arcade game with many of the virtues of that venerable classic *Football Manager*. Whilst the programming is only OK the design and play of the game makes it tremendously addictive and makes any doubts about some of the graphics vanish.

The game simulates a 60-over match and you can play against either a fellow cricketer or the computer. Somewhat like the system in dungeon games, you get 50 points for batting and 30 points for bowling to share out, naming your own teams, and allotting skills amongst the players, to give you the tactically best team. You also choose the style of play eg 'F' for fast bowler 'S' for slow and select a wicket keeper and batsmen.

Factors like the dampness of the weather and hence the wicket will affect the choice of bowler and so on, to a certain extent, the choices of team have an effect on the outcome of the game. Joystick is used for bowling and batting. In bowling, the joystick first controls speed, then spin, moving from one to the other when the bowler reaches the crease. In batting you control the position of the batsman and the height of the bat. When the ball has been hit (or missed) the screen display switches to an aerial view of the action as fielders try to get it and now the joystick lets you make runs – if any.

You can even set up the position of your fielders and, of course, move them when fielding for a catch. It's a game that bears much repeated play with a real sense of tactics. The graphics are adequate and no more but you'll find such considerations quickly become irrelevant as you play the game.

Program *Tim Love's Cricket*
Price *£8.99*
Micro *Commodore 64*
Supplier *Peaksoft*
48 Queen Street
Balderton
Newark
Notts NG24 3NS

ZONE CLONE

More American software made available in this country by US Gold. This time it's something called *Stellar 7* from The Graphics People. The Blurb describes the usual 'last defender against the alien hordes' type plot. This time you are armed (only) with the Raven experimental armoured craft which is transported to seven different places, there to battle using only its armory and an invisible cloak type thing.

Now all this might lead you to believe that this is not what it in fact is, for what we have here is yet another version of *Battlezone* complete with 3D line graphics and strange alien landscapes.

In its favour, *Stellar 7* is probably the most sophisticated version of *Battlezone* available on the Commodore and includes features like a zoom lens which lets you peer into the far distance, various sorts of weapons and even a self-destruct mechanism presumably so that you can do it to yourself before they do it to you.

The game plays fairly well, looks OK and should do well, but I hope Atari don't find out.

Program *Stellar 7*
Price *£9.95*
Micro *Commodore 64*
Supplier *US Gold*
Unit 10
The Parkway Industrial Centre
Heneage Street
Birmingham B7 4LY

HORRORS

There isn't a lot of software about for the C16, not surprising really, perhaps, given the short amount of time it's been available. But still . . . it makes you think.

Anyway Melbourne House have launched on to the C16 world that 'horror of horrors' a gamespack. Actually it's worse than that, there are two of them.

Now Gamespacks are usually a classic case of more equals less. Unsuspecting punters desperate for games buy the things thinking that 20 games for £8 is great value without realising just how bad some games can be. Net result is 20 games, most of which are never played more than once. Gamespack stories abound amongst computer buffs in the same way that painful operations fill the lives of hypochondriacs.

Anyway, what of Melbourne's offerings, all of which are in Basic and games of one sort or another. Thankfully there has been some attempt to provide stuff that isn't going to suffer from being brief, simple and written wholly in Basic. So what you get are a lot of puzzles, logical questions, simple strategy games and the like. You also get *Breakout* and *Hangman* but, what the heck, someone likes them.

There is nothing in either of the packs that is going to keep you glued to your computer but mostly it's OK. Some of the programs bear a few repeats but nothing is above the level of what you might find featured as a readers' game in this and other magazines.

Program *C16 Games Pack I and II*
Price *£5.95 (each)*
Micro *Commodore 16*
Supplier *Melbourne House*
Castle House
Castle Yard
Richmond
TW10 6TF

This Week

Program	Type	Micro	Price	Supplier
Centre Court	S	Amstrad	£7.95	Amsoft
Detective	S	Amstrad	£7.95	Amsoft
Survivor	Arc	Amstrad	£7.95	Anirog
Identify Europe	Ed	BBC	£7.95	Kosmos
Titan	Ut	BBC	£10	Tomorrow's Drm
C16 Games Pack I	Arc	C16	£5.95	Melbourne Hse
C16 Games Pack II	Arc	C16	£5.95	Melbourne Hse
1985	Arc	Commodore 64	£1.99	Mastertronic
Dallas Quest	Ad	Commodore 64	£14.95	US Gold
Front Line	Arc	Commodore 64	£7.00	Interceptor
Valkyrie 17	Ad	Commodore 64	£9.99	Palace Software
Hyper Biker	Arc	Commodore 64	£7.99	PSS
Shoot the Rapids	Arc	Commodore 64	£7.95	New Generation
Stellar 7	Arc	Commodore 64	£9.95	US Gold
Tim Love's Cricket	S	Commodore 64	£8.95	Peaksoft
Manic Miner	Arc	Dragon 32	£7.95	Software Project
Pitfall II	Arc	MSX	£11.99	Activision
River Raid	Arc	MSX	£11.99	Activision
Pete n Barry	Arc	Spectrum	£6.90	Impact
Finders Keepers	Arc	Spectrum	£1.99	Mastertronic
Alien	S	Spectrum	£8.99	Argus
Disass/Relocator	Ut	Spectrum	£6.95	Graysoft
Villain	Arc	Vic 20	£6.00	Interceptor

Key: Ad — adventure/Arc — arcade/Ed — education/
S — strategy-simulation/Ut — utility

Pick of the week

DON'T SHOOT

Shoot the Rapids is the latest Commodore 64 game from New Generation software, a company best known for Spectrum titles like *Travels with Trashman* and *3D Maze*. It has the immediate virtue of being based around something not yet covered anywhere else in the industry, ie canoeing.

You might think that this sport is a pretty unlikely candidate for a computer game but actually it works very well. You simulate paddling using three keys or a joystick for left, right and vital for rapids, backwards. The canoeing motion requires some skill to master – the keys are very responsive and a very even left right tap is necessary for speed.

There are various kinds of challenges – slalom against the clock as you twist and turn to get through the water gates, obstacles like islands, rocks, a speedboat and from time to time, a beaver which gets in the way. It's amazingly addictive and graphically excellent – the canoe is a large sprite and although everything is viewed from above there is a real sense of 3D to the landscape of banks and rocks.

One point, though, don't be put off by the cover which is totally naff – I don't think photographs are generally a good idea.

Program *Shoot the Rapids*
Price *£7.95*
Micro *Commodore*
Supplier *New Generation, The Brooklands, 15 Sunnybank, Lyncombe Vale, Bath BA2 4ND*

DREAM ON

Tomorrows Dream Software is a new software house producing programs for the BBC and the Spectrum. Its inaugural release is a utility for the BBC called *Titan* which is described as a 'Debugging Monitor Utility'.

What it is is really more difficult to explain than simply to indicated what it will do. You can step singly through Ram, Rom and graphics routines, there is an intelligent masked string search routine, a times, facilities for breakpoints in Rom and Ram, an intelligent memory mover and you can relocate the whole thing in memory.

As a debugger you get conditional breakpoints at relative branches, you can use OSCLI commands within it and it displays four memory locations which are up-dated as you single step through. Finally, for those who understand all this stuff, you can disassemble, it has a set of arithmetic operators, hex-dec conversion ASCII dump, and hex dump and it will print the lot out. Something similar is planned for the Spectrum.

Program *Titan*
Price *£10*
Micro *BBC*
Supplier *Tomorrows Dream Software, Richmond House, 1B Sydenham Road, Bristol BS6 5SH*

JUMPED UP

Hyper Biker is one of those software packages that will mean a lot to you if the *Basic* idea of controlling a bike and jumping over things appeals to you and nothing at all if it doesn't.

There are various kinds of biking challenges and the secret to all of them comes in mastery of the bike controls. There is not only the pedals which operate in realistic fashion – each rotation getting easier as you pick up speed. Handle bars are not only for left and right but also for such bursts of showy egomania as wheelies.

There are obstacle races, straight races, wheelie races, jumps both long and high, bunny hops, some solo, some in competition and, like Track and Field, you get a scrolling background.

It's probably a fairly sophisticated simulation but I'm afraid it left me cold.

Program *Hyper Biker*
Price *£7.95*
Micro *Commodore 64*
Supplier *PSS, 452 Stoney Stanton Rd, Coventry CV6 5DG*

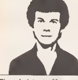
Compiled by Graham Taylor

New Releases is designed to let people know what software is coming on the market. If you have a new game or utility which you are about to release send a copy and accompanying details to New Releases, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 3LD

This Week

Activision 15 Harley House Marylebone Road London NW1 01-486 7588 **Amsoft** Brentwood House 169 Kings Road, Brentwood, Essex 0277 230222 **Anirog** Victoria Industrial Park Victoria Road, Dartford Kent DA1 5AJ 0322 92513/8 **Argus** No 1 Golden Square London W1R 3AB **Greysoft** 2 Bedford Way, Rugeley Staffs WS15 1LB **Interceptor,** Interceptor Micro's Lindon House The Green, Tadley Hampshire **Impact** 0884 38312. **Kuempe,** 1 Pilgrims Close Harlington Dunstable, Bedfordshire LU5 6LX **Mastertronic,** Park Lorne, 111 Park Road NW8 01-402 3316 **Melbourne House** 39 Milton Trading Estate Abingdon Oxon OX14 4TD 0235 835001 **New Generation** Freepost, Bath BA2 4TD 0225 316924 **PSS** 452 Stoney Stanton Road Coventry CV6 5DB 0203 667556 **Palace Software** Scala Cinema, 275 Pentonville Road London N1 01 278 0751 **Peaksoft,** 48 Queen Street, Balderton Newark Notts NG24 3NS 0636 705230 **Software Projects** PO Box 12 Bearbrand Complex Allerton Road Woolton, Liverpool L25 7SF 051 428 9393 **Tomorrow's Dream,** Richmond House 1b Sydenham Road, Bristol BS6 5SH **US Gold** Unit 10 The Parkway Ind Centre Heneage Street, Birmingham B7 4LY 021 359 3020

This Week is a new section that covers all the new software coming on to the home micro market each week. All suppliers should send details of their new programs to This Week, *Popular Computing Weekly*, 12-13 Little Newport Street, London WC2H 3LD



The right stuff

We are moving out of an age where the dominant methods of communication requires the objective and rational approach of science

The progress of science has long since moved beyond the point where all people can grasp it emotionally, and what is happening instead is the creation of a suspended world based on a mixture of myth and scientific wish fulfilment. That this is the case is nowhere seen better than in the computer field.

At one point a new scientific truth could touch the whole civilised world.

This is not the case today Science, I believe, appeals only to those with a rigidly logical disposition. Or to put it in psychological terms, science only affects the left and not the right hemisphere of the brain. The brain is divided into two sides with the left being the centre of logical thought. Thought takes place in a rational, linear fashion, and studies show that this is where the speech and writing centres are located. The right hemisphere, on the other hand is the creative and intuitive side of the brain Any aspect of thought that involves using your imagination will involve your right hemisphere

Increasingly, scientific progress seems to appeal only to the rational mind and the 'large pattern' understanding of the right side is lost The result of this is an increasingly confusing world Moreover it is a world where those with an inkling of this situation are able to take advantage of others ignorance This ignorance is easier to find in males, since being able to bring other human beings into the world engages your right hemisphere automatically Something denied man. Thus it is that the home computer world remains a left brain male-dominated one There are few pursuits for the male that engage the right hemisphere, but this holistic side of the brain is vital if the human animal is to survive

Most of the people involved in computers are left-hemisphere dominated, and seeking to learn to use their right hemispheres more. The code that programmers work with is the ultimate left-hemisphere logic – an apparently meaningless list of letters and numbers Yet this code needs the right hemisphere to make any sense. Thus programmers often choose the extreme right-hemisphere possibilities to contrast with the code.

Home computer owners are at the forefront of a revolution in the sense that humanity grows sick in a world dominated by one hemisphere or way of thought. People are gradually starting to recognise this and the great journey from the left to the right hemisphere has begun What will inevitably happen is that those with a creative bent will emerge as leaders of a kind vastly different from our current ones.

Few public figures openly use their right hemispheres, but those that do so successfully become very successful. Anyone reading Sir Clive Sinclair's thoughts on the coming domination of silicon over carbon will recognise the right hemisphere at play The idea of a Golden Age of literature, poetry and scientific advances that free people from drudgery is an attractive one, but it is simply a metaphor

When pressed Sir Clive cannot be specific about the type of world which might surround us in such a future He can t, because it is the result of logical thought It is an appeal to the right hemisphere from a man who appears to be very left-hemisphere oriented A scientist would never give it currency, but that doesn t matter It is more than a very good sales pitch from the arch self-publicist It is an observation that our current materialistic ethos will not – cannot – survive

Our future appears unfocussed, other than to say that we will perhaps swing into right hemisphere thinking with a vengeance, based on the repression of instinct for too long In that event, we will become akin to the Homeric ideal, when we discover the tribal society that we haven t quite lost (witness the miners strike) Those more in touch with the gods (our potent right hemisphere myths) will perhaps emerge as the new leaders

Mike Shialsan

Mis-deal!

Puzzle No 141

Sam was experimenting with a standard pack of playing cards when he found something rather curious. By dealing out the cards a number of times, without shuffling them between deals he noticed that the cards were once again in their original order

What he did was to deal four hands of 13 cards from left to right dealing as you would normally when playing cards The pack was then reassembled by stacking the piles in order, pile 1 (the left hand pile) ending up on top and pile 4 (the right hand pile) on the bottom This procedure was then repeated without shuffling

How many operations are required before the cards are once again in their original order? If four extra cards are added (making 56 in all), how many deals are needed?

Solution to Puzzle No 136

The lock's combination is 704, and Sonya's age is 64 We need to test all three-digit numbers to determine which are exactly divisible by the sum of their digits The program counts the number of times each integral result occurs and prints out any that have a value of 6 This only occurs with the number 64

If the program is modified to print out these individual values it can be seen that 320, 512, 640, 704, 732 and 960 all result in 64 when divided by the sums of their digits but as the correct combination can be determined knowing the units digit – only if this were a '4' would a unique answer be possible

10 Dim Z(100) 20 For N=100 to 999 30 N$=STR$(N) 40 T=0 50 for F=1 to 3 60 T=T+VAL(MID$(N$,F,1)) 70 Next F 80 If N/T=INT (N/T) then Z(N/T)=Z(N/T)+1 90 Next N 100 CLS 110 For F=1 to 100 120 If Z(F)=6 then print F,Z(F); 130 Next F 140 GOTO140

Winner of Puzzle No 136

The winner of Puzzle 136 is Dr Ian Logan of Skellingthorpe, Lincoln, who receives £10

Rules

If the puzzle can be sensibly solved using a computer, then the winner will have included a listing of the program used to find the correct answer The closing date for Puzzle No 141 is February 1

The Hackers



GIFT FROM THE GODS

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SHUT UP AND EAT YOUR BREDDY REK!

HEY, LISTEN TO THIS! AUTOMATA HAVE GONE AMSTRAD!

FLEM IN NECK! THEY NEVER BLUE DITTLD OOS!

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